

# Athena

sewing machine • model 1200 • two way sewing surface



# SINGER

# *Athena 1200*

## Solid-state Electronic Sewing Machine

### *Congratulations . . .*

You are about to sew on the new, advanced electronic sewing machine . . . *Athena* 1200.

It makes sewing simple, foolproof and fun!

After years of Singer research, the *Athena* 1200 sewing machine features these important technological breakthroughs:

- **Exclusive Solid-state Electronic Sewing System.** *Athena* 1200 is the sewing machine with the electronic "brain." A wealth of stitch patterns, it automatically programs your machine to sew any one of twenty-one different practical and decorative stitches plus the two-step buttonhole.
- **Exclusive Light Touch Fingertip Controls.** They're the buttons on the front of the machine. You simply touch the one under the stitch you want — the red indicator light comes on — and the *Athena* 1200 is ready to sew. Any stitch is instantly available at the touch of a button.
- **Exclusive Individual Preference Panel.** Your own "control panel," it allows you to modify the programmed stitch dimensions to suit special fabrics and satisfy personal preferences.

And that is only the beginning! There are many more new features. Such as the Exclusive Pattern Repeat Button — that lets you sew one *unit* of a pattern, for original decorative touches. And Exclusive Light Touch Fingertip Reverse Button — for an instant reverse straight stitch. The *Athena* 1200 also has such Singer advantages as the Exclusive *Flip & Sew*\* panel for both flat and in-the-round sewing. Soft-Touch Fabric Feed that protects even the most delicate fabrics. A variable speed Solid-state Control System, that enables you to maintain the same pressure on the speed controller as you sew through varying fabric thicknesses.

In addition, the *Athena* 1200 has these Singer design features — a one-way needle clamp that makes it impossible to put the needle in backwards, snap-on presser feet that are quickly removed and easily replaced, and easy-to-change needle plates secured by magnets.

We suggest you take a few moments to read through this operator's guide, as you sit at your new machine. You will quickly discover how simple it is to do any sewing operation you desire on *Athena* 1200.

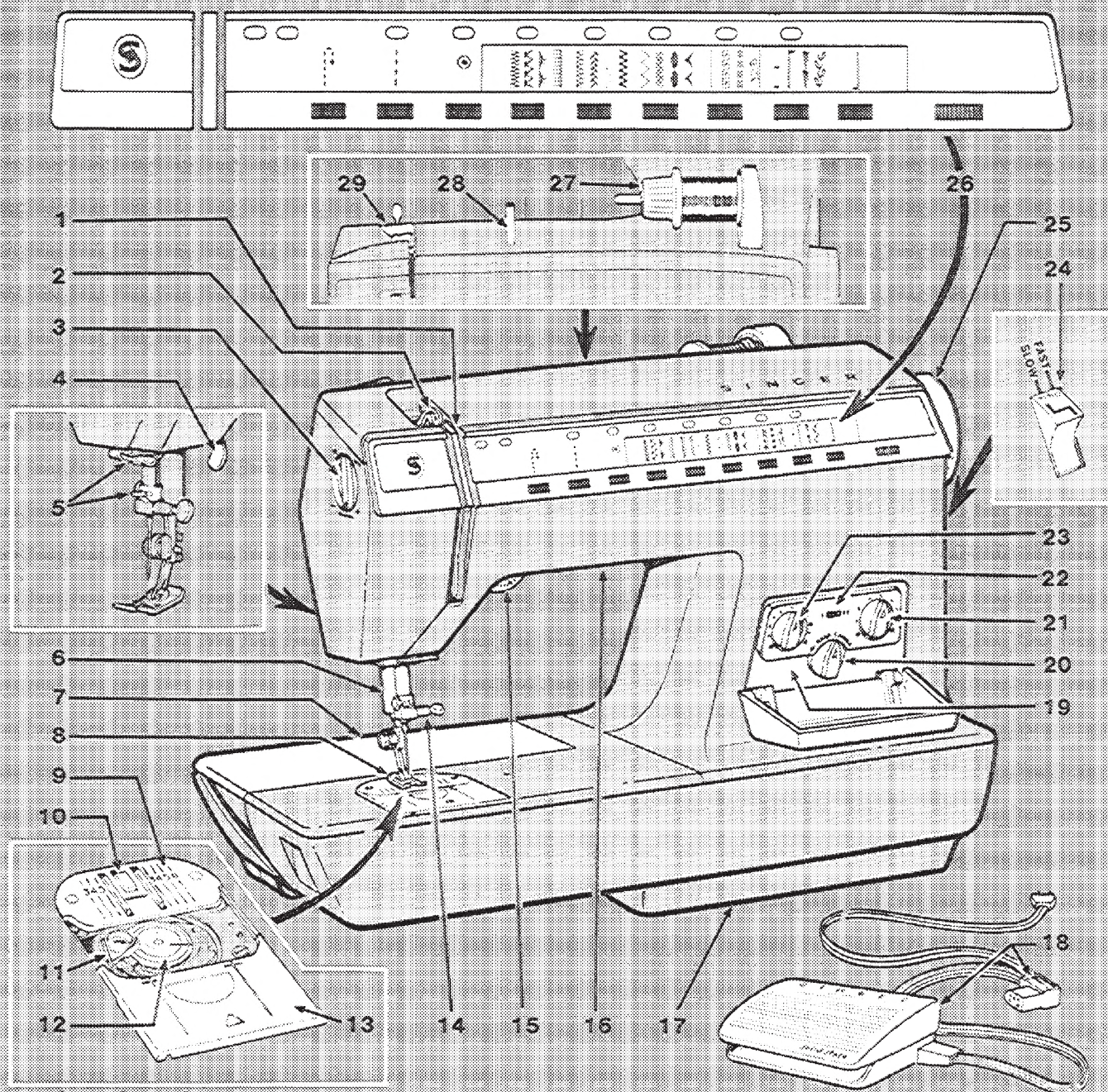
*Enjoy Sewing!*

# Contents

|  | Page |
|--|------|
| <b>1. Getting to Know Your Machine</b> .....   | 2    |
| Principal Parts .....  | 2    |
| Accessories .....  | 3    |
| <b>2. Getting Ready to Sew</b> .....   | 6    |
| Choosing Needles .....   | 6    |
| Choosing and Changing Accessories .....  | 7    |
| Operating the Machine .....  | 9    |
| Fabric Weight Table .....  | 10   |
| Fabric, Thread, and Needle Table .....   | 12   |
| Threading the Machine .....  | 14   |
| The Bobbin .....   | 16   |
| Winding the Bobbin • Changing the Bobbin   |      |
| <b>3. Electronic Sewing</b> .....  | 20   |
| Selecting a Stitch .....   | 20   |
| Pattern Repeat Button • Individual Preferences   |      |
| Stitch Adjustments .....   | 22   |
| Stitch Width • Stitch Length • Stitch Length Guidance Table • Reverse Stitch-Balance •     |      |
| Twin-Needle Switch   |      |
| <b>4. Straight Stitching</b> .....   | 25   |
| Preparation .....  | 25   |
| Fabric Handling .....  | 27   |
| Pin Basting • Speed Basting  |      |
| Sewing a Seam .....  | 29   |
| Placing Fabric under Foot • Sewing with a Newly Wound Bobbin • Keeping Seams Straight •    |      |
| Turning Square Corners • Curved Seams • Reinforcing End of Seam                            |      |
| Applications .....   | 32   |
| Darning • Quilting • Chainstitching  |      |
| <b>5. Basic Zig-Zag Stitching</b> .....  | 40   |
| Zig-Zag Stitching .....  | 40   |
| Creative Applications .....  | 41   |
| <b>6. Machine Stitch Patterns</b> .....  | 46   |
| Adjusting Stitches for Stretch Fabrics .....   | 46   |
| Handling Special Fabrics .....   | 47   |
| Stitch Centering .....   | 48   |
| Stitch Usage: Functional and Decorative .....  | 49   |
| Decorative Stitching .....   | 64   |
| Border Designs • Monograms • Topstitching • Smocking • Twin-Needle Stitching               |      |
| <b>7. Buttons and Buttonholes</b> .....  | 69   |
| Buttons .....  | 69   |
| Buttonholes .....  | 70   |
| Buttonhole Position • Buttonhole Length • Buttonhole Interfacing • Two-Step Buttonholing • |      |
| Balancing the Buttonhole • Stitching a Series of Buttonholes • Cutting Button Opening •    |      |
| Corded Buttonholes   |      |
| <b>8. Free-Arm Sewing</b> .....  | 75   |
| <b>9. Performance Checklist</b> .....  | 79   |
| <b>10. Caring for Your Machine</b> .....   | 82   |
| <b>11. Sewing Aids</b> .....   | 84   |
| <b>Index</b> .....   | 87   |



# 1. GETTING TO KNOW YOUR MACHINE



## *principal parts*

1. Tension Discs
2. Take-up Lever
3. Pressure Dial
4. Presser-foot Lifter
5. Thread Guides
6. Thread Cutter
7. Hinged Plate
8. Presser Foot
9. General Purpose Needle Plate

10. Soft-touch Feed
11. Bobbin Latch
12. Transparent Bobbin
13. Slide Plate
14. Needle Clamp
15. Tension Dial
16. Built-in Sewing Light
17. Circuit Breaker
18. Electrical Connections and Speed Controller
19. Individual Preference Panel

20. Reverse Stitch-balance Control
21. Stitch-length Control
22. Twin-needle Switch
23. Stitch-width Control
24. Power and Light Switch
25. Hand Wheel
26. Stitch Selection Panel
27. Friction-free Spool Holder
28. Snap-in Thread Guidepost
29. Rear Thread Guide



## accessories

The accessories provided with your Model 1200 sewing machine are designed to help you do many kinds of sewing easily and perfectly. To increase the versatility of your machine, additional accessories can be purchased at your Singer store.

### 1. Transparent Bobbins (No.181551)

### 2. Needles

- Style 2020 for all-purpose sewing.
- Style 2045 for sewing knits, stretch fabrics and elastic.
- Style 2025 for twin-needle decorative stitching.

**IMPORTANT:** Your SINGER sewing machine has been designed to obtain best results with SINGER® needles. You should follow the recommendations in this instruction book and on the needle package for correct style and size of needle for different types and weights of fabric.

### 3. General Purpose Foot and General Purpose Needle Plate†

are on your machine when delivered. Use them for alternating between straight and zig-zag stitching as well as utility zig-zag sewing. They can also be used for straight-stitching firm fabrics.

### 4. Straight-stitch Foot and Straight-stitch Needle Plate†

Use these when your fabric or sewing procedure requires close control.

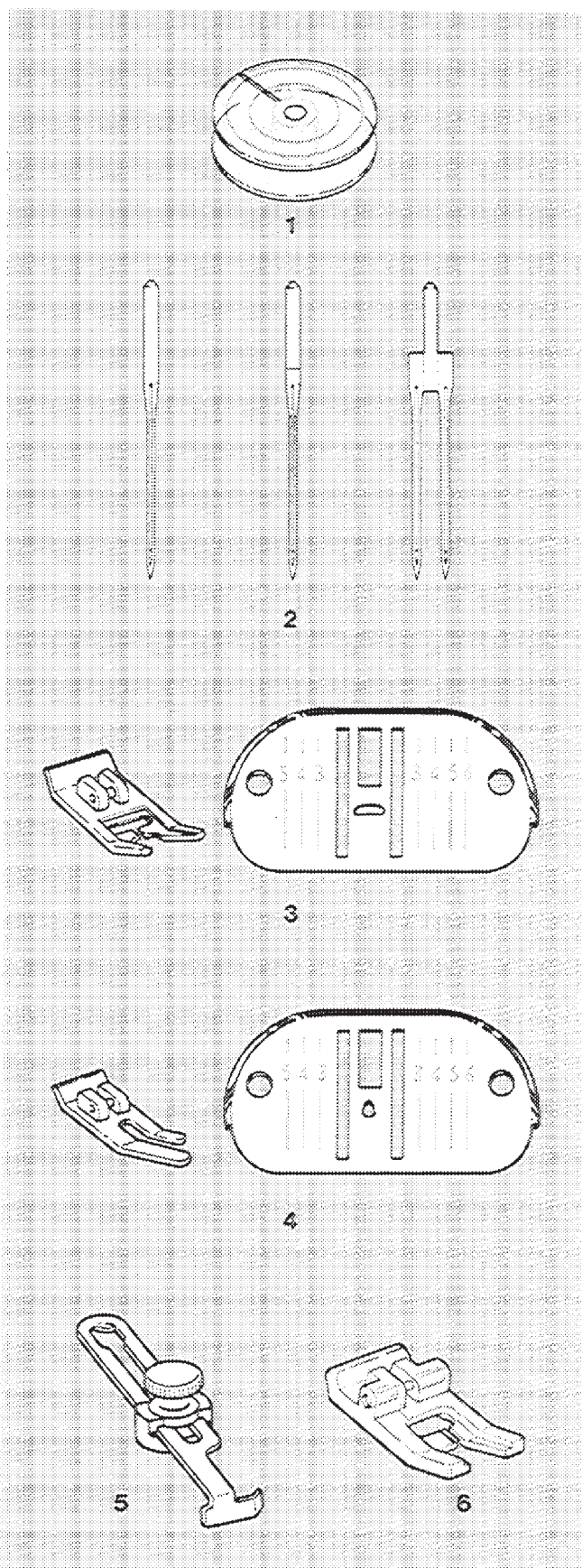
These accessories, recommended for all straight-stitch sewing, are especially helpful for edge stitching and collar pointing, or for stitching delicate or spongy fabrics.

### 5. Seam Guide

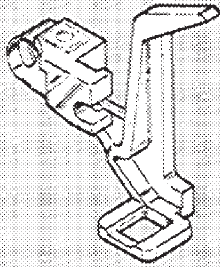
helps you keep seam allowances perfectly even.

### 6. Special-purpose Foot

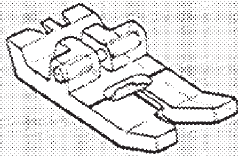
Use this for all kinds of decorative zig-zag stitching.



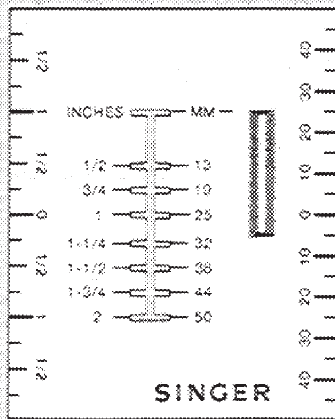
†Numbers on plate indicate distance from needle in eighths of an inch.



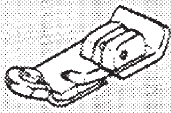
7



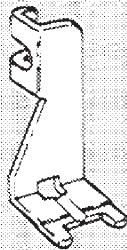
8



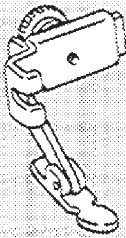
9



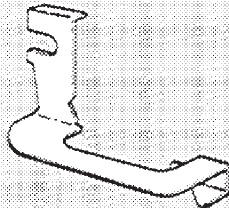
10



11



12



13

7. **Darning and Embroidery Foot** is recommended for all types of free-motion work. It is ideal for embroidery, monogramming and decorative designs because the transparent toe fully reveals the line of the design to be followed.

8. **Two-step Buttonhole Foot** lets you stitch buttonholes of any length in two easy steps.

9. **Buttonhole Gauge** has slots for marking buttonhole guidelines.

10. **Overedge Foot** used with overedge stretch stitch for seams in stretch fabrics.

11. **Button Foot** holds most buttons securely for stitching.

12. **Zipper Foot** for inserting zippers and stitching corded seams.

13. **Blindstitch Hem Guide**. Use this with the general purpose foot to position the hem for blindstitch hemming.



**14. Feed Cover Plate** for button sewing and free-motion work.

**15. Chainstitch Fittings**

- a. Bobbin-case Insert
- b. Chainstitch Plate†

**16. Detachable Spool Pin** for decorative twin-needle stitching and two-thread topstitching.

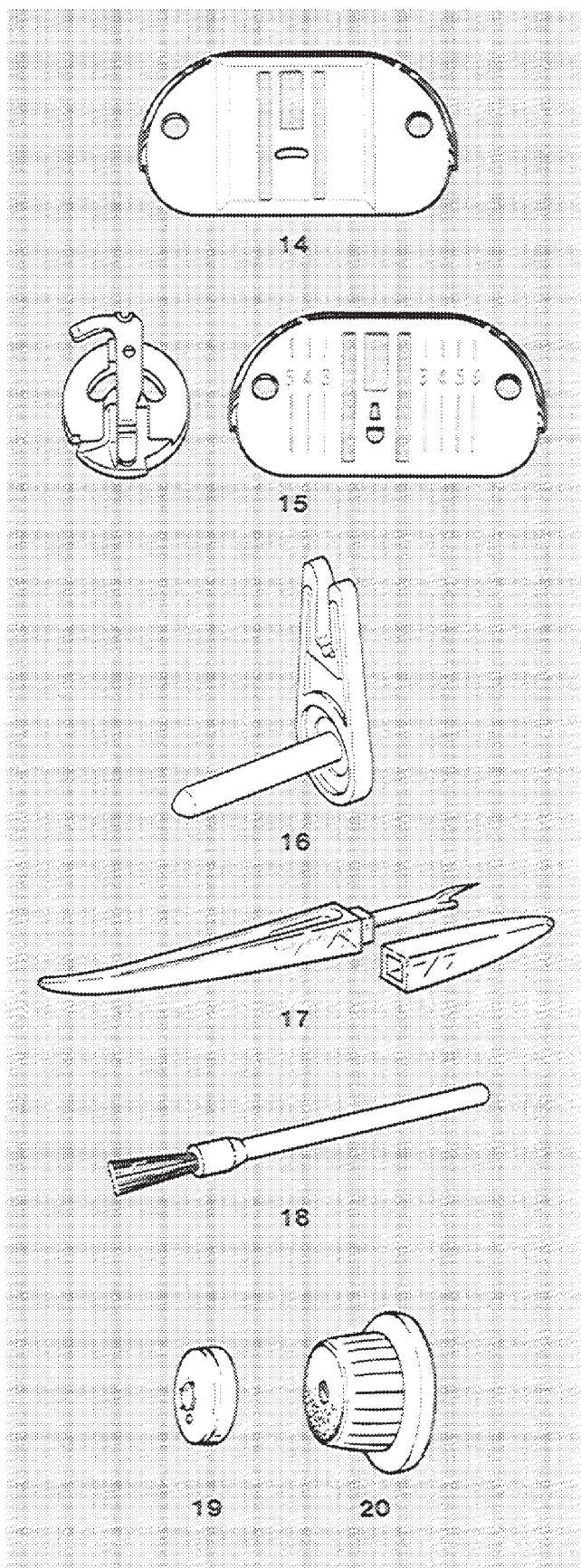
**17. Seam Ripper** to pick and cut threads quickly and neatly without damage to the fabric.

**18. Lint Brush** for cleaning your sewing machine.

**19. Small Spool Holder**

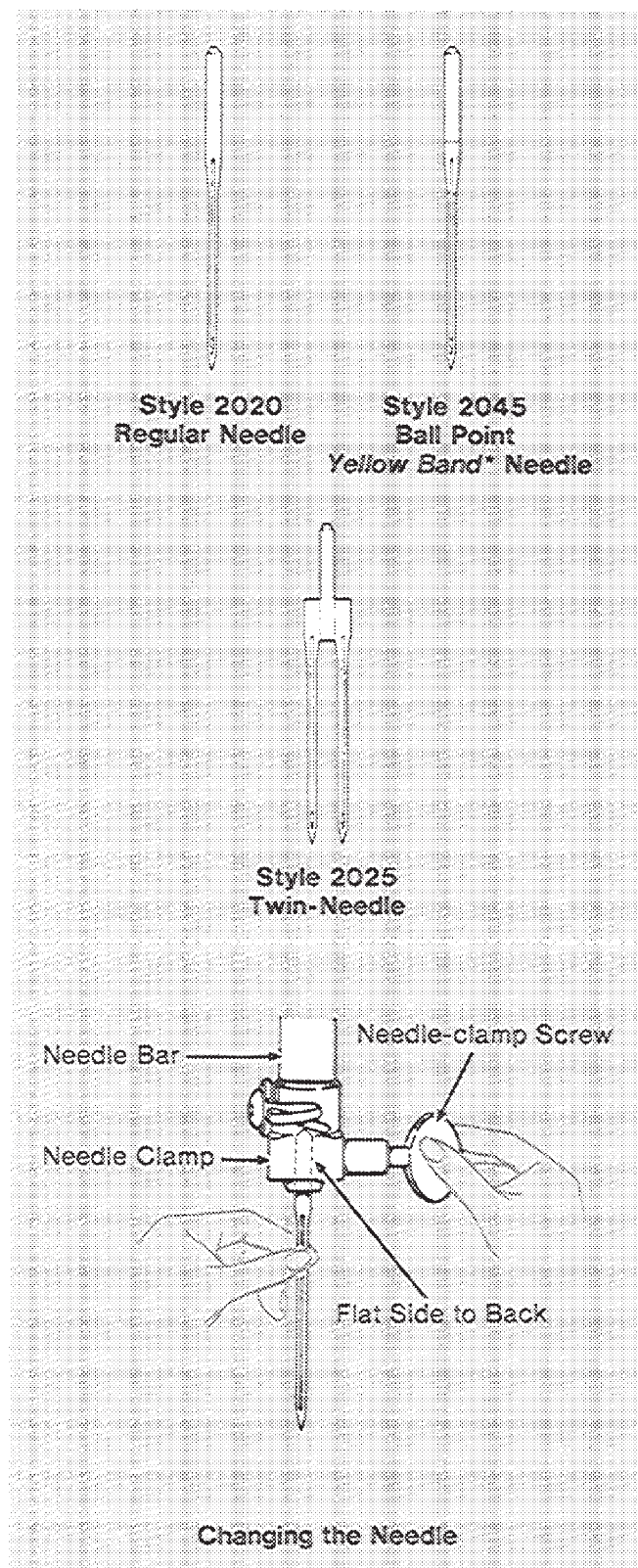
- For use with small diameter tubes of thread.

**20. Large Spool Holder** on your machine when delivered. For use with medium and large spools of thread.



†Numbers on plate indicate distance from needle in eighths of an inch.

## 2. GETTING READY TO SEW



### *choosing needles*

The needles you use should be straight to ensure perfect stitch formation. The needle should also be fine enough to prevent the fabric from being marred with large punctures, yet heavy enough to pierce the fabric without being bent or deflected.

Remember too, that the eye of the needle must be large enough for the thread to pass through freely; too fine a needle will cause the thread to fray. See Fabric, Thread and Needle Table, page 12.

For general-purpose sewing in a wide range of fabrics, the Style 2020 needle, in sizes 9 through 18, will give you excellent results.

For best results when sewing on knits, woven stretch fabrics, bonded vinyls, and elastic use Style 2045 ball point *Yellow Band\** needle, available in sizes 11, 14, and 16.

For decorative stitching on light and medium-weight woven fabrics, use the twin needle, Style 2025.

For sewing leathers, real and simulated, the Style 2032 needle, available for purchase at your Singer Sewing Center, is recommended.

### **Changing the Needle**

- Raise needle to its highest point by turning the hand wheel *toward you*. Loosen needle-clamp screw, and remove the needle.
- Insert new needle up into clamp as far as it will go, with the flat side of the needle to the back.
- Tighten needle-clamp screw.



# choosing and changing accessories

## CHANGING PRESSER FEET

### Snap-on Presser Foot

Most of the presser feet furnished with your machine snap on and off a common shank.

- Raise needle and take-up lever to highest position by turning the hand wheel *toward you*.
  - Raise presser foot.
1. Press toe of presser foot upward (as far as it will go) and then snap down to remove.
  2. Center the new presser foot under the shank and lower the presser-foot lifter so that the shank fits over the presser-foot pin.
  3. Press presser-foot screw down firmly until foot snaps into place.

To remove and replace the shank of snap-on presser feet, follow instructions below for one-piece presser feet.

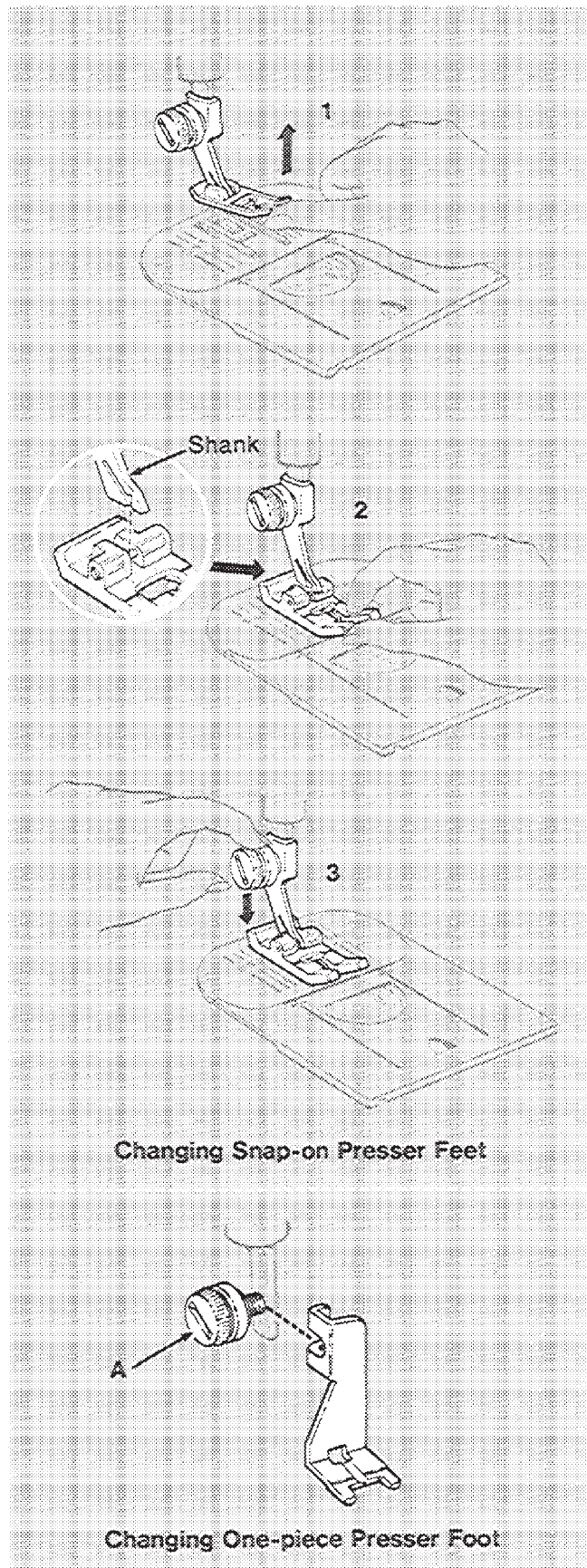
### One-piece Presser Foot (Button Foot and Zipper Foot)

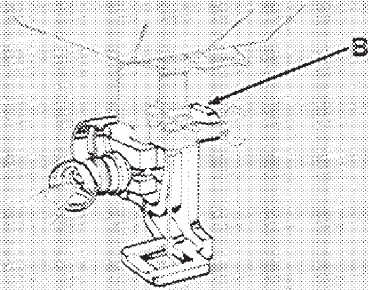
- Raise needle and take-up lever to highest position by turning the hand wheel *toward you*.
- Raise presser foot.
- Loosen presser foot screw (A) and remove the foot, guiding it to the right.

**Note:** When changing one-piece presser feet, you should insert the edge of a coin in the slot of the presser foot screw to tighten presser foot securely.

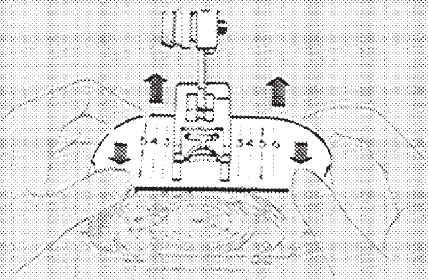
### To Replace One-piece Feet

- Hook one-piece foot around the presser bar and tighten presser-foot screw.

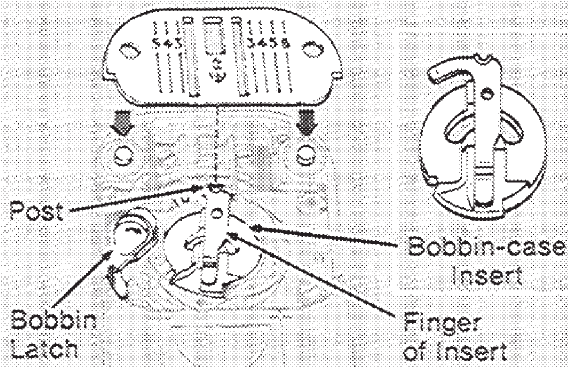




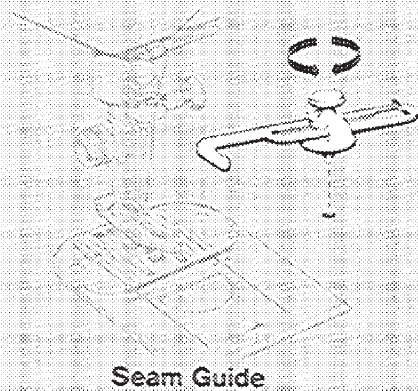
Attaching Darning and Embroidery Foot



Changing Plates



Attaching Chainstitch Fittings



Seam Guide

## Darning and Embroidery Foot

1. Raise needle and take-up lever to highest position by turning hand wheel *toward you*.
2. Raise foot.
3. Loosen presser foot screw and remove presser foot shank.
4. Guide darning and embroidery foot into position from back of machine. Make sure lifting finger (B) is above needle clamp.
5. Tighten presser foot screw with coin.

## CHANGING NEEDLE PLATES

**Note:** Remove bobbin if it contains thread in order to prevent thread being caught when plate is replaced.

1. Raise needle and take-up lever to highest position by turning the hand wheel *toward you*.
2. Raise presser foot.
3. Open slide plate. Press down on front edge of plate and lift up and out.
4. Position new plate over pins and release. Plate is drawn into position by magnets. See special instructions below for attaching chainstitch plate.
5. Close slide plate.

## Chainstitch Plate and Insert

1. Raise needle and take-up lever to highest position and raise presser foot.
2. Open slide plate.
3. Move bobbin latch to left and remove bobbin and needle plate from machine.
4. Place bobbin-case insert in bobbin case as shown, with finger of insert positioned under the feed.
5. Position chainstitch plate over holding pins, making certain that the post of the bobbin-case insert finger enters the hole in the plate.
6. Close slide plate.

## ATTACHING THE SEAM GUIDE

Place screw in hole to the right of the slide plate; line up straight edge of guide with the needle plate guideline for desired seam width, and tighten screw.



# operating machine

## CONNECTING MACHINE

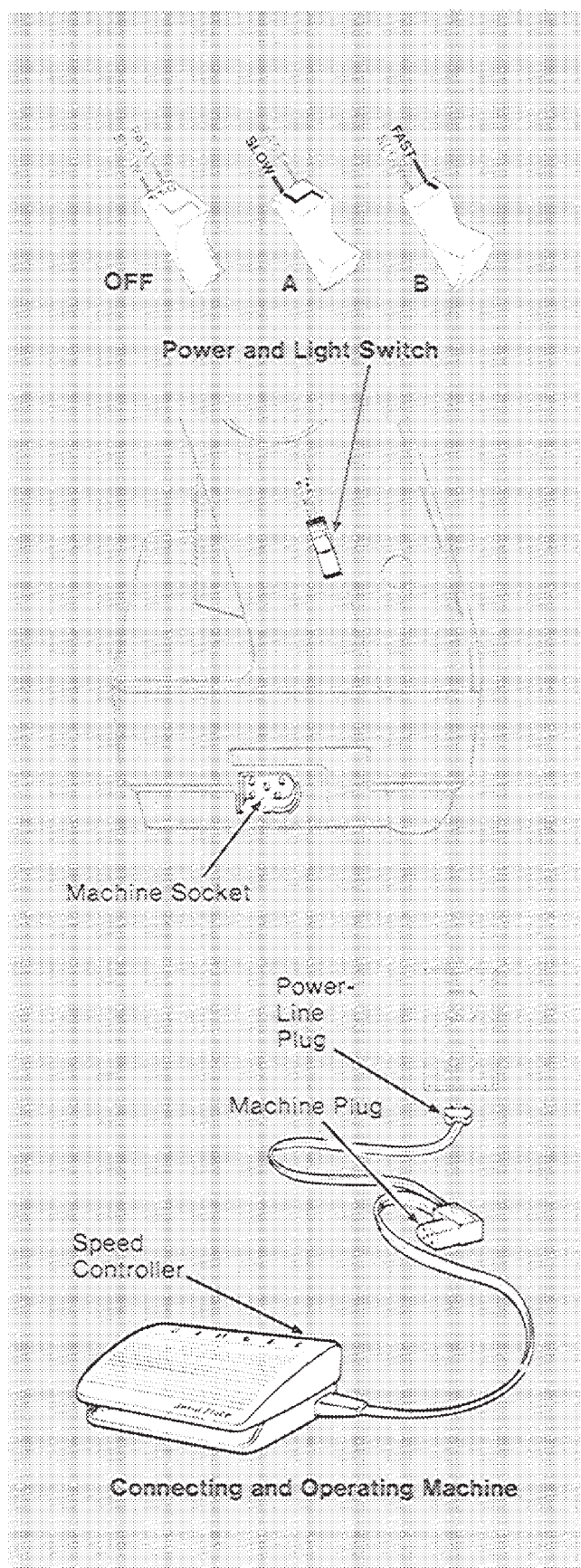
- Push the machine plug into the machine socket.
- Connect the power-line plug to your electrical outlet.

To turn on the machine and set speed range, push the power and light switch to desired speed. This will also turn on the sewing light.

- The **SLOW** setting **A** (switch pressed in halfway) allows for maximum control. Use this setting for special jobs such as button sewing and buttonhole making, decorative patterns, bobbin winding, and where intricate details require close control.
- The **FAST** setting **B** (switch pressed in all the way) allows for full speed capacity of the machine. It is best for long, straight seams, easy-to-handle fabrics, and general sewing where a variety of speeds are needed.

**CAUTION:** We recommend that you turn off the power and light switch before changing needles, presser feet or plates and when leaving the machine unattended. This eliminates the possibility of starting the machine by accidentally pressing the speed controller.

To run the machine, press the foot or knee speed controller. The *harder* you press, the faster the machine will sew within the selected speed range. The *lighter* you press, the slower the machine will sew within the selected speed range.



## FABRIC WEIGHT TABLE

There are thousands of fabrics around the world; each manufactured with a specific fiber and weight. The fabrics below have been classified according to weight to give a small sample of what is available for purchase.

| TYPE & FIBER             | FILMY                       | SHEER                | LIGHT  | MEDIUM   | HEAVY   | VERY HEAVY   |
|--------------------------|-----------------------------|----------------------|--|--|---|--|
| <b>SILK</b><br>(Woven)   | Chiffon<br>Organza<br>Tulle | Net<br>Lace<br>Ninon | Velvet<br>Crepé de Chine<br>Shantung<br>Faile  | Velvet<br>Crepé de Chine<br>Shantung<br>Suiting<br>Brocade             |   |  |
| (Knit)                   |                             |                      | Jersey   |  |   |  |
| <b>RAYON</b><br>(Woven)  | Tulle                       | Net<br>Lace          | Velvet<br>Taffeta<br>Satin   | Velvet<br>Taffeta<br>Satin<br>Crepe                                    | Brocade<br>Taffeta<br>Satin<br>Crepe  |  |
| (Knit)                   |                             |                      | Ciré   |  |   |  |
| <b>COTTON</b><br>(Woven) | Voile<br>Tulle              | Net<br>Lace          | Challis<br>Organdy<br>Muslin<br>Batiste<br>Dimity<br>Lawn<br>Percale<br>Eyelet<br>Gingham<br>Piqué<br>Poplin | Velveteen<br>Corduroy<br>Velvet<br>Fleece<br>Velour<br>Terry<br>Chintz | Corduroy<br>Denim<br>Ticking<br>Canvas<br>Linen<br>Drapery Fabric<br>Burlap | Denim<br>Duck<br>Canvas<br>Sailcloth<br>Upholstery<br>Fabric |
| (Knit)                   |                             |                      | Jersey   | Stretch Velours †<br>Stretch Terry †                                   |   |  |
| <b>WOOL</b><br>(Woven)   |                             |                      | Cashmere<br>Flannel<br>Mohair<br>Felt<br>Crepé   | Suiting<br>Flannel<br>Gabardine<br>Felt<br>Serge<br>Mohair             | Suiting<br>Tweed<br>Duffel  | Coating<br>Blanketing  |
| (Knit)                   |                             |                      | Jersey   | Jersey   |   |  |

† Usually contain some synthetic fibers also.



**FABRIC WEIGHT TABLE (cont.)**

| <b>TYPE &amp; FIBER</b>         | <b>FILMY</b>                | <b>SHEER</b>                           | <b>LIGHT</b>   | <b>MEDIUM</b>  | <b>HEAVY</b>                             | <b>VERY HEAVY</b>     |
|---------------------------------|-----------------------------|--|--|--|--|-----------------------|
| <b>SYNTHETIC (Woven)</b>        | Chiffon<br>Organza<br>Tulle | Net<br>Lace<br>Ninon<br>Crepé de Chine | Crepé<br>Velvet<br>Taffeta<br>Satin  | Velvet<br>Crepé<br>Taffeta<br>Satin<br>Gabardine   |  |                       |
| <b>(Knit)</b>                   |                             |  | Raschel<br>Single Knit<br>Sweater Knit<br>Bonded Knit<br>Tricot<br>Ciré                | Jacquard<br>Double Knit<br>Sweater Knit<br>Bonded Knit<br>Tricot<br>Spandex<br>Stretch Terry<br>Stretch Velour<br>Deep Pile<br>Fake Furs | Double Knit<br>Helenca<br>Fake Furs      |                       |
| <b>SYNTHETIC BLENDS (Woven)</b> |                             | Voile                                  | Broadcloth<br>Batiste<br>Eyelet<br>Gingham<br>Poplin                                   | Linen Type<br>Poplin<br>Corduroy<br>Gabardine  | Denim<br>Gabardine<br>Drapery Fabric     |                       |
| <b>(Knit)</b>                   |                             |  | Single Knit  | Terry Knit   | Double Knit                              |                       |
| <b>LEATHER</b>                  |                             |  | Kidskin<br>Patent<br>Chamois<br>Imitation-<br>Leathers &<br>Suedes<br>Leather<br>Suede | Patent<br>Imitation-<br>Leathers &<br>Suedes<br>Leather<br>Suede<br>Reptile  | Buckskin<br>Calfskin<br>Suede<br>Reptile | Upholstery<br>Leather |
| <b>PLASTIC</b>                  |                             | Plastic Film                           | Plastic Film   |  |  |                       |
| <b>VINYLS</b>                   |                             |  |  | Bonded Vinyl<br>(Knit Back)<br>Patent<br>Embossed<br>Printed   | Upholstery<br>Vinyl                      | Upholstery<br>Vinyl   |

## FABRIC, THREAD AND NEEDLE TABLE

Choosing the correct needle and thread for your fabric is of utmost importance. Correct choice will make the difference in the wear and appearance of your new garment. The Fabric Weight Table on the previous page; and the Fabric, Thread and Needle Table below are practical guides to needle and thread selection. Refer to them before starting a sewing project. Be sure to use the same size and type of thread in both needle and bobbin.

To select the correct needle and thread for your fabric, first refer to the Fabric Weight Table to determine the weight and type of the material you are using.

Next refer to the Fabric, Thread and Needle Table.

| TYPE<br>OF<br>FABRIC        | FILMY                          |         | SHEER                          |         | LIGHT                                 |         |
|-----------------------------|--------------------------------|---------|--------------------------------|---------|---------------------------------------|---------|
|                             | THREAD                         | NEEDLES | THREAD                         | NEEDLES | THREAD                                | NEEDLES |
| <b>SILK</b>                 | Fine Silk<br>Fine Mercerized   | 2020-9† | Fine Silk<br>Fine Mercerized   | 2020-9† | Fine Silk<br>Fine Mercerized          | 2020-11 |
| <b>RAYON</b>                | Fine Silk<br>Fine Mercerized   | 2020-9† | Fine Silk<br>Fine Mercerized   | 2020-9† | Fine Silk<br>Fine Mercerized          | 2020-11 |
| <b>COTTON</b>               | Fine Cotton<br>Fine Mercerized | 2020-9† | Fine Cotton<br>Fine Mercerized | 2020-9† | Medium Cotton<br>Medium Mercerized    | 2020-11 |
| <b>WOOL</b>                 |                                |         | Fine Silk<br>Fine Mercerized   | 2020-11 | Fine Silk<br>Fine Mercerized          | 2020-11 |
| <b>SYNTHETIC</b>            | Fine Synthetic                 | 2020-9† | Fine Synthetic                 | 2020-9† | Fine Synthetic                        | 2045-11 |
| <b>SYNTHETIC<br/>BLENDS</b> | Fine Synthetic                 | 2020-9† | Fine Synthetic                 | 2020-9† | Fine Synthetic                        | 2045-11 |
| <b>LEATHER</b>              |                                |         |                                |         | Medium Mercerized<br>Medium Synthetic | 2032-11 |
| <b>PLASTIC</b>              |                                |         |                                |         | Fine Mercerized<br>Fine Synthetic     | 2020-11 |
| <b>VINYLS</b>               |                                |         |                                |         | Fine Mercerized<br>Fine Synthetic     | 2020-11 |

† Size 9 needle is recommended for sewing only. For bobbin winding, use larger size needle.

Find the fabric you are using in Type of Fabric column at left. (Silk, rayon, etc.) Then locate the fabric weight column (filmy, sheer, etc.) for your fabric at top of table. Read across from Type of Fabric column to correct weight of fabric column. There, the correct thread and needle choice for your fabric will be found.

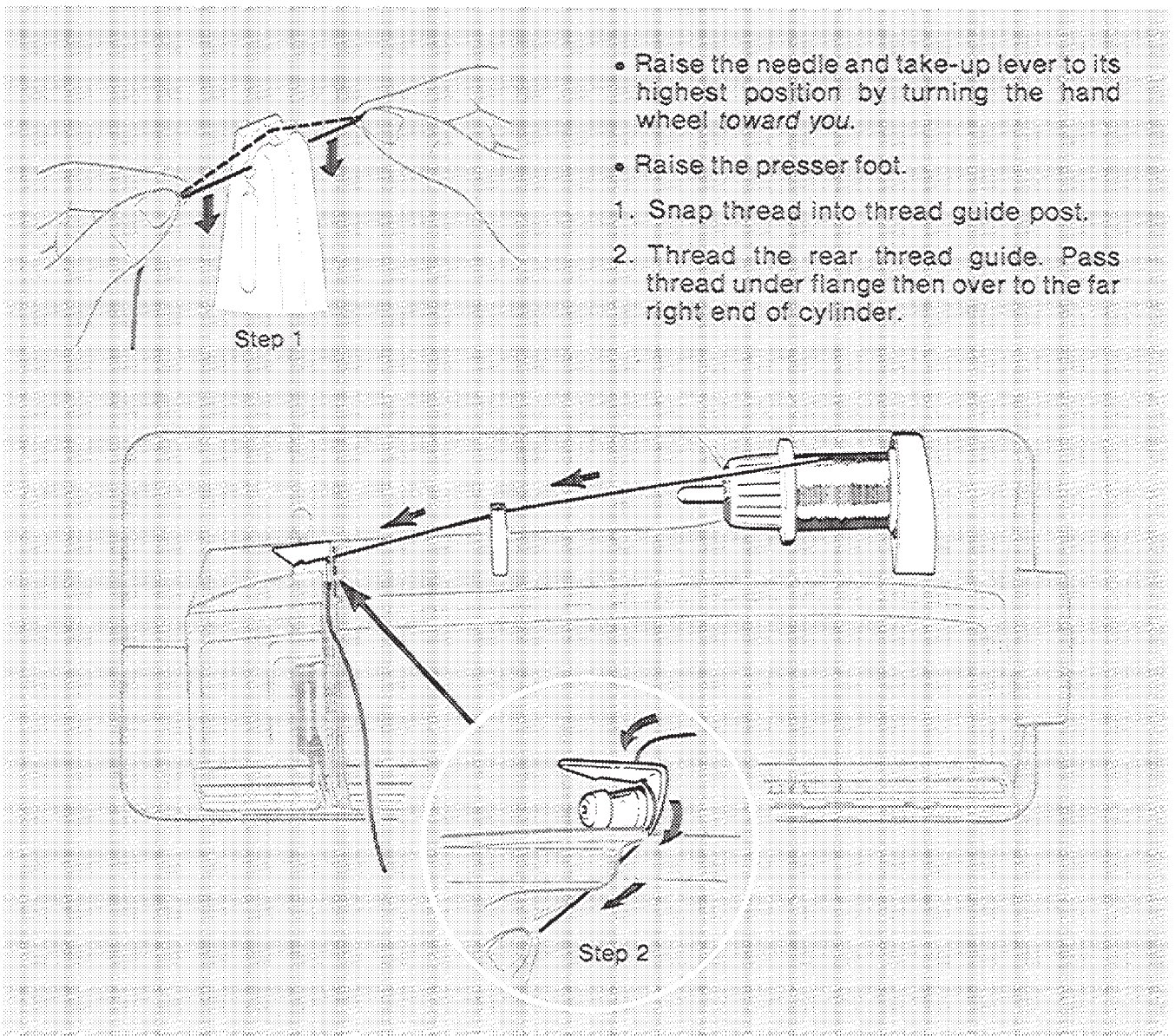
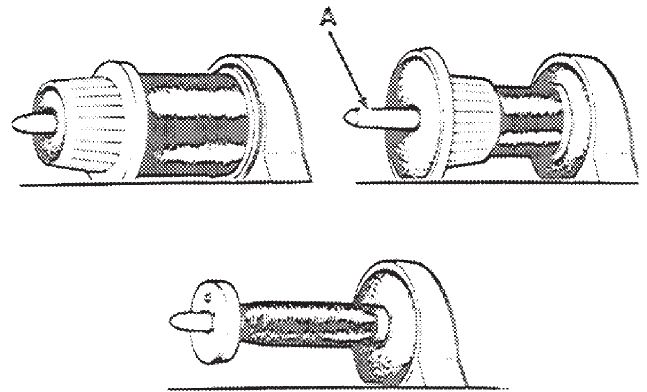
Example: If you are sewing a medium weight wool, find wool in Type of Fabric column. Read across to Medium (weight) column and you will see that a medium silk or mercerized thread and a size 2020-14 needle are to be used.

| MEDIUM                                |         | HEAVY                                 |         | VERY HEAVY                          |               |
|---------------------------------------|---------|---------------------------------------|---------|-------------------------------------|---------------|
| THREAD                                | NEEDLES | THREAD                                | NEEDLES | THREAD                              | NEEDLES       |
| Medium Silk<br>Medium Mercerized      | 2020-11 | Heavy Silk<br>Heavy Mercerized        | 2020-14 | Heavy Silk                          | 2020-14       |
| Medium Synthetic<br>Medium Mercerized | 2020-11 | Heavy Synthetic<br>Heavy Mercerized   | 2020-14 | Heavy Synthetic<br>Heavy Mercerized | 2020-14       |
| Medium Cotton<br>Medium Mercerized    | 2020-14 | Heavy Cotton<br>Heavy Mercerized      | 2020-16 | Heavy Cotton<br>Heavy Mercerized    | 2020-18       |
| Medium Silk<br>Medium Mercerized      | 2020-14 | Heavy Mercerized                      | 2020-16 | Heavy Mercerized                    | 2020-16       |
| Medium Synthetic                      | 2045-14 | Heavy Synthetic                       | 2045-16 | Heavy Synthetic                     | 2020-16 or 18 |
| Medium Synthetic                      | 2045-14 | Heavy Synthetic                       | 2045-16 | Heavy Synthetic                     | 2020-16 or 18 |
| Medium Mercerized<br>Medium Synthetic | 2032-14 | Heavy Mercerized<br>Heavy Synthetic   | 2032-16 | Heavy Mercerized<br>Heavy Synthetic | 2032-16       |
| Medium Mercerized<br>Medium Synthetic | 2020-11 | Medium Mercerized<br>Medium Synthetic | 2020-14 | Heavy Mercerized<br>Heavy Synthetic | 2020-16       |
| Medium Mercerized<br>Medium Synthetic | 2020-11 | Medium Mercerized<br>Medium Synthetic | 2020-14 | Heavy Mercerized<br>Heavy Synthetic | 2020-16       |

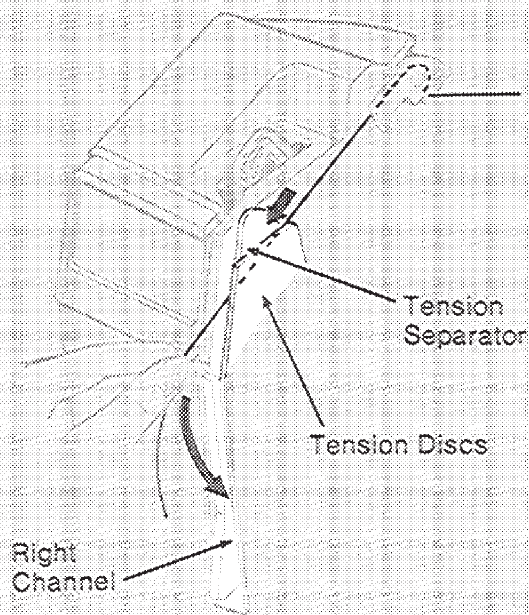


## threading the machine

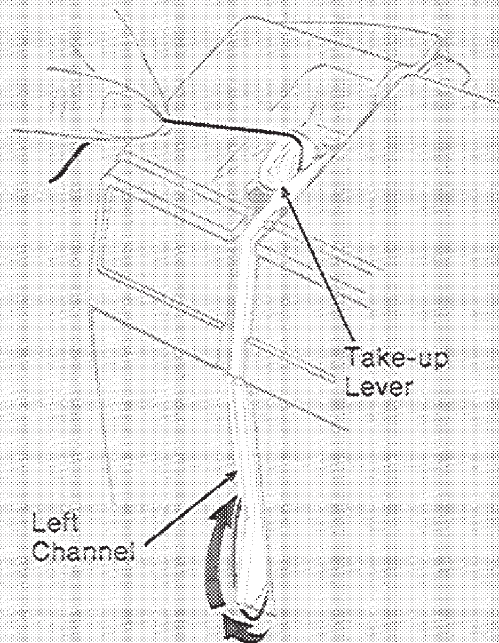
- Place spool of thread on horizontal spool pin (A). If spool being used has a thread retaining slit, this should be placed against the spool cushion to the right.
- Select correct spool holder according to type and diameter of spool being used. The diameter of the end of the spool holder should always be larger than that of the spool itself.
- Press spool holder firmly against spool.



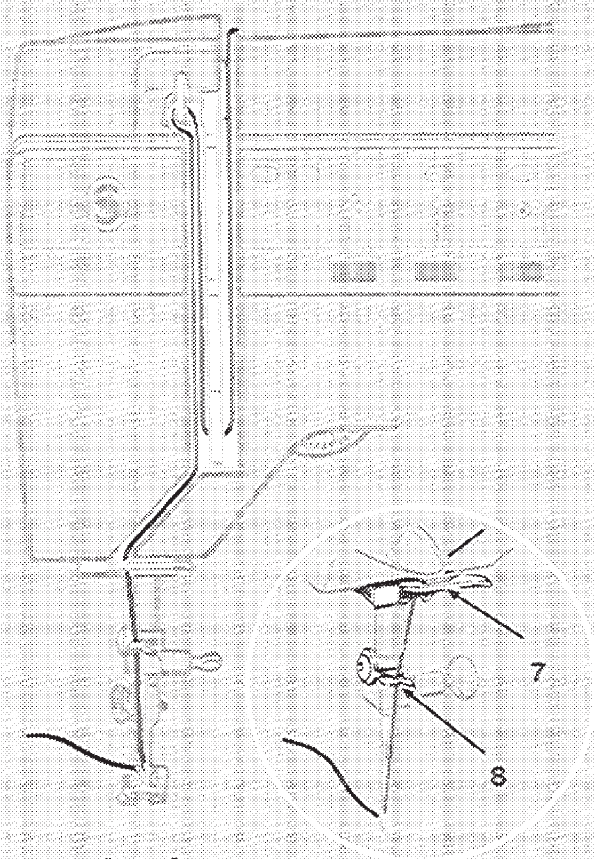
- Raise the needle and take-up lever to its highest position by turning the hand wheel toward you.
- Raise the presser foot.
- 1. Snap thread into thread guide post.
- 2. Thread the rear thread guide. Pass thread under flange then over to the far right end of cylinder.



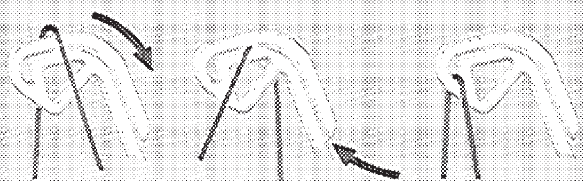
Step 3



Step 4



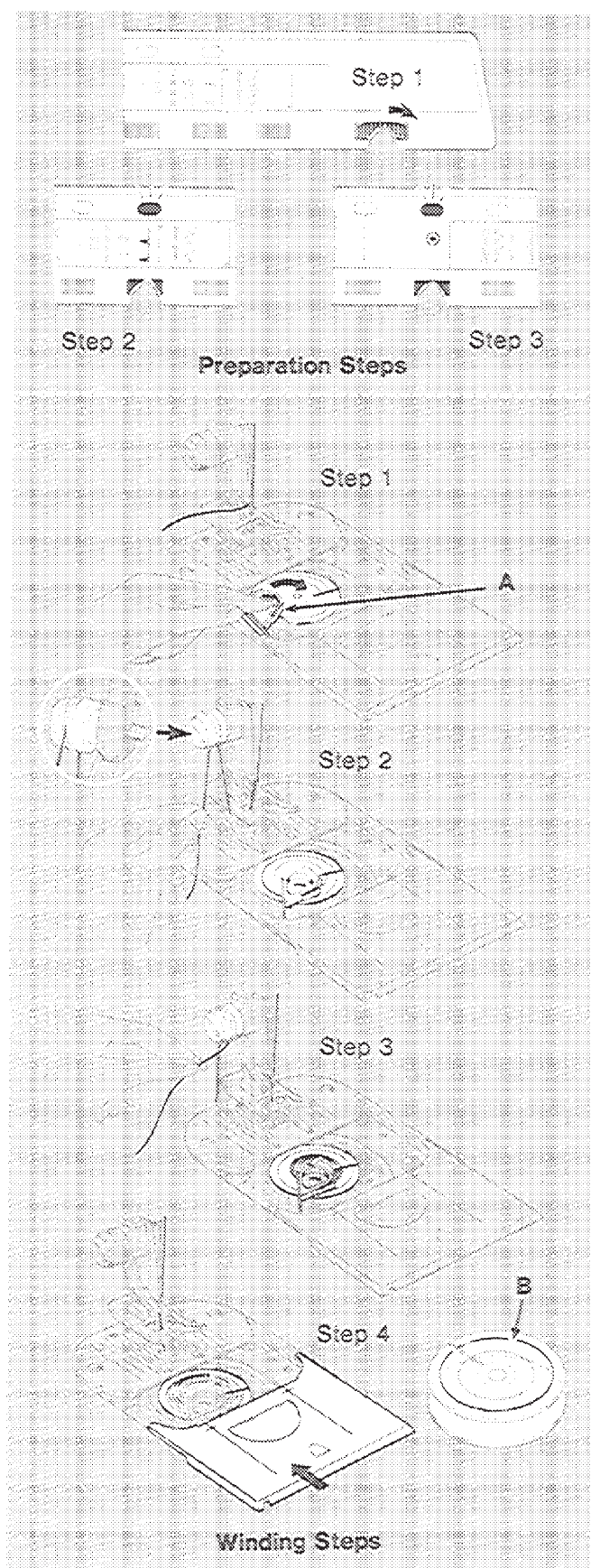
Step 6



Step 5

3. Draw thread firmly into tension disc on right of tension separator.
4. Draw thread down right channel and up left channel.
5. Thread take-up lever by guiding thread to back of lever and around to your left. Bring thread through slit by pulling it toward you into eyelet.
6. Follow thread back down through left channel and then diagonally toward thread guides. (7 and 8)
7. Keeping left finger over bottom of diagonal thread channel, guide thread to the right into thread guide. (7)
8. Then draw thread through guide. (8)

Drawing 4 inches (10cm) of thread down towards needle, lower presser foot and thread needle front to back.






## the bobbin

### WINDING THE BOBBIN

You will find a bobbin in place under the slide plate of your machine. (To open slide plate, simply draw it gently toward you.) If the bobbin runs out of thread during sewing, you can rewind it without removing it from the machine. The window in the slide plate lets you see bobbin-thread supply at a glance, to help avoid running out of thread in the middle of a seam.

#### Preparation Steps

- Raise the needle and take-up lever to highest position by turning the hand wheel toward you.
- Raise the presser foot to release tension discs.
- Open slide plate and make sure bobbin is empty. For removal of bobbin and thread, see page 17.

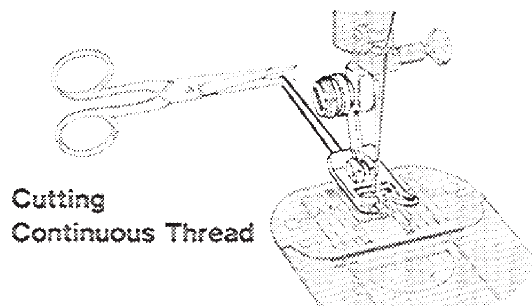
1. Rotate group selector dial to right until blindstitch symbol  appears in the yellow field above pattern selector button.
2. Activate blindstitch  by pressing button under the graphic on stitch panel.
3. Then press pattern repeat symbol  to stop needle from its up and down motion. This will ensure a smooth flow of thread from the thread spool to the bobbin.

Detailed information on selecting stitches is found on page 20.

#### Winding Steps

1. Move bobbin latch **A** to extreme right (wind position).
2. Draw needle thread back between toes of presser foot, under left side of presser foot then up, into and around thread retainer. Start machine, running it at a moderate speed.
3. Pull thread end away after it has separated from bobbin.
  - Watch the bobbin as it fills. Do not allow thread to wind beyond the outside **FULL** ring **B**.
4. Close slide plate to release bobbin latch to sewing position.





To start sewing, pull thread back under presser foot and cut. Place threads diagonally under foot to left side, position needle in fabric where desired, lower presser foot, and start machine.

## CHANGING THE BOBBIN

### Removing the Bobbin

*Raise needle and take-up lever to its highest position by turning the hand wheel toward you.*

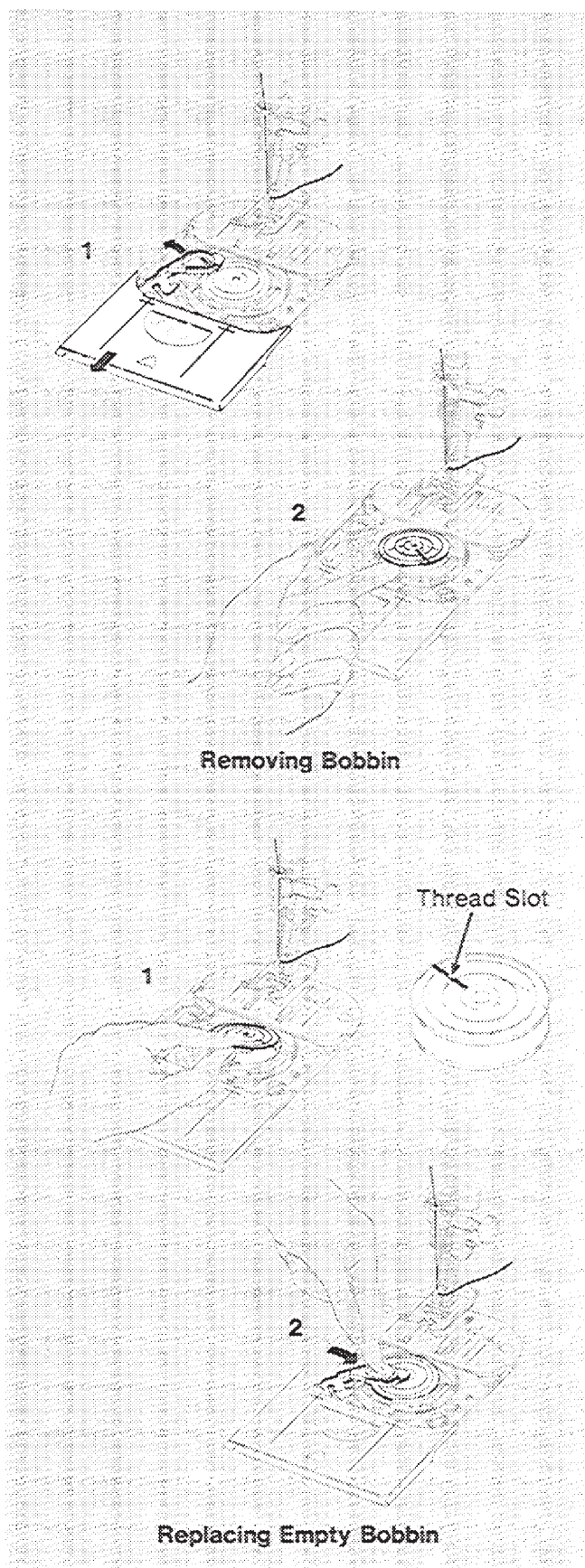
1. Open slide plate; move bobbin latch to left.
2. Remove bobbin by inserting finger under rim of bobbin.

### Replacing an Empty Bobbin

1. Slip bobbin (thread slot on top) into bobbin case.
  2. Move bobbin latch to extreme right (wind position).
- Leave slide plate open until you have finished winding the bobbin.

### Removing Thread from Bobbin

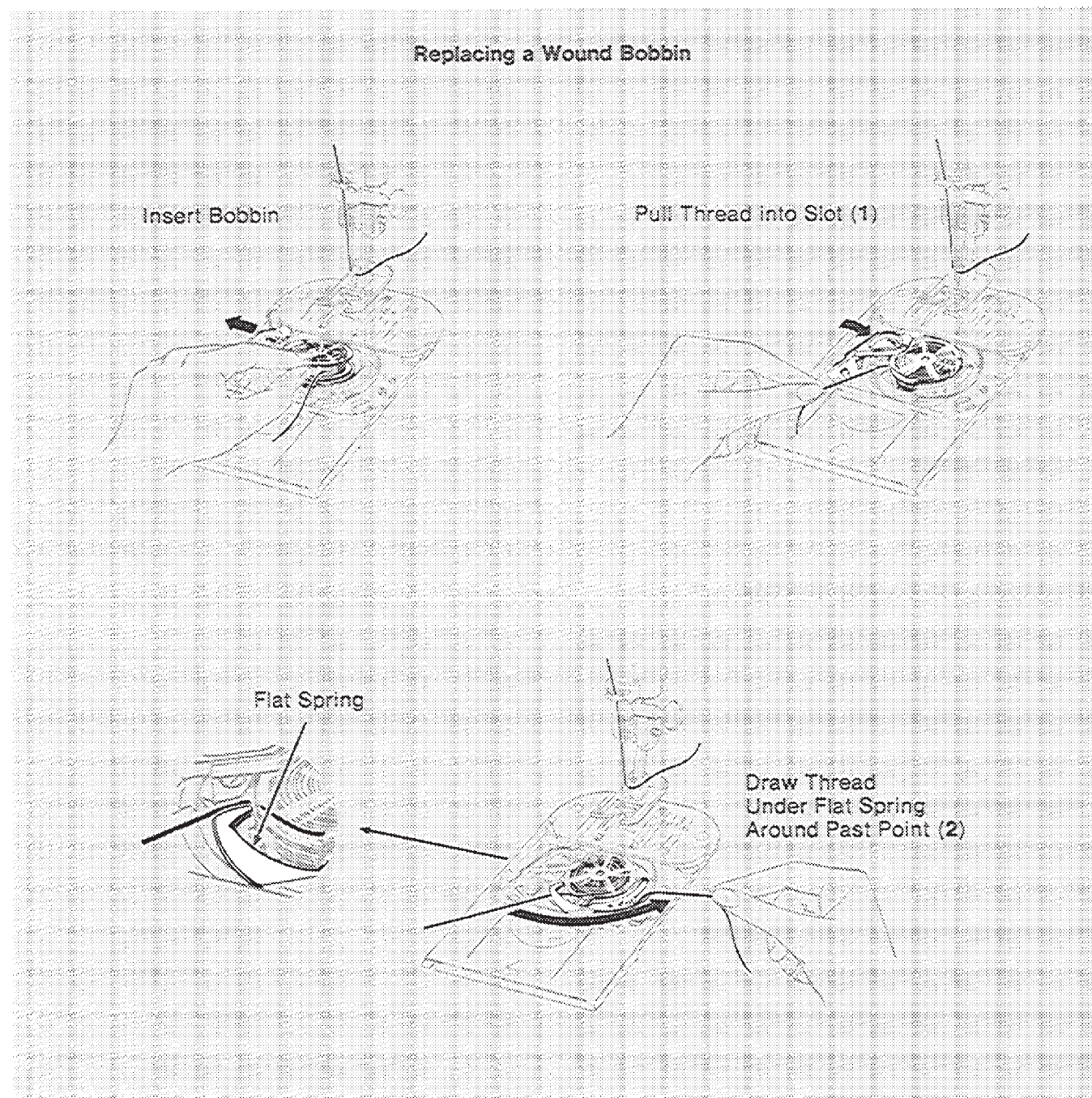
You can leave the bobbin in place while removing thread. With slide plate closed, pull thread end through the plate with a steady motion. Do not pull the thread across the feed as this may damage it.



## Replacing a Wound Bobbin

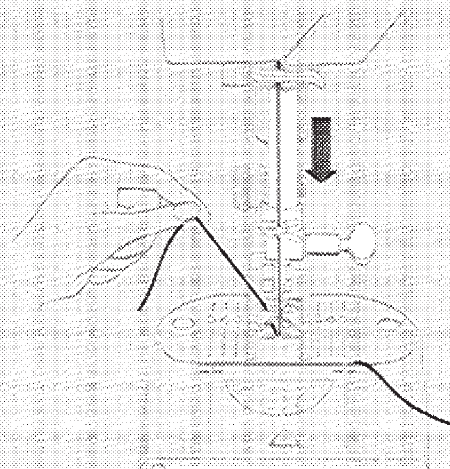
*Raise needle and take-up lever to its highest position by turning hand wheel toward you.*

- A. Open slide plate; move bobbin latch to left.
- B. Draw about an inch (2.5cm) of thread from bobbin and insert bobbin in case. Move bobbin latch slightly to the right (sewing position).
- C. Pull thread into bobbin-case slot (1), draw it under flat spring and around to and past point (2) leaving three inches (7cm) of free thread.
- D. Close slide plate. Closing slide plate makes raising bobbin thread easier because this step prevents the thread from coming out of the threading points.

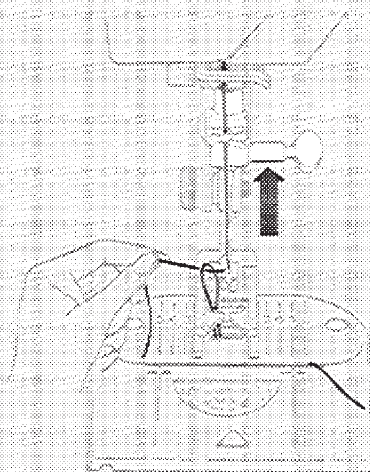


## Raising the Bobbin Thread

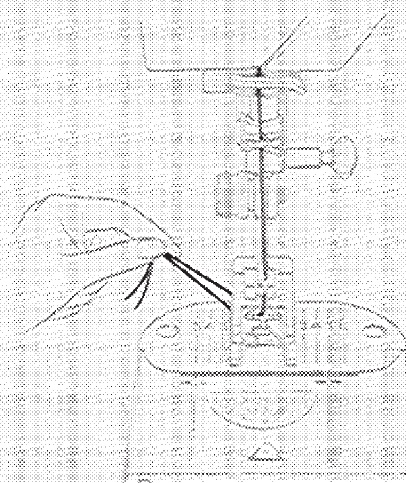
1. Hold needle thread lightly with left hand and turn hand wheel slowly *toward you* so the needle enters plate.



2. Continue turning hand wheel and holding needle thread until needle rises. Tighten your hold on the needle thread and bring up bobbin thread in a loop.



3. Open the loop with your fingers, draw needle and bobbin threads leaving approximately 4 inches (10cm), under the presser foot and place them diagonally to left.





# 3. ELECTRONIC SEWING

## selecting a stitch

Turn machine on.

(You will note a slight movement of needle each time power switch is activated)

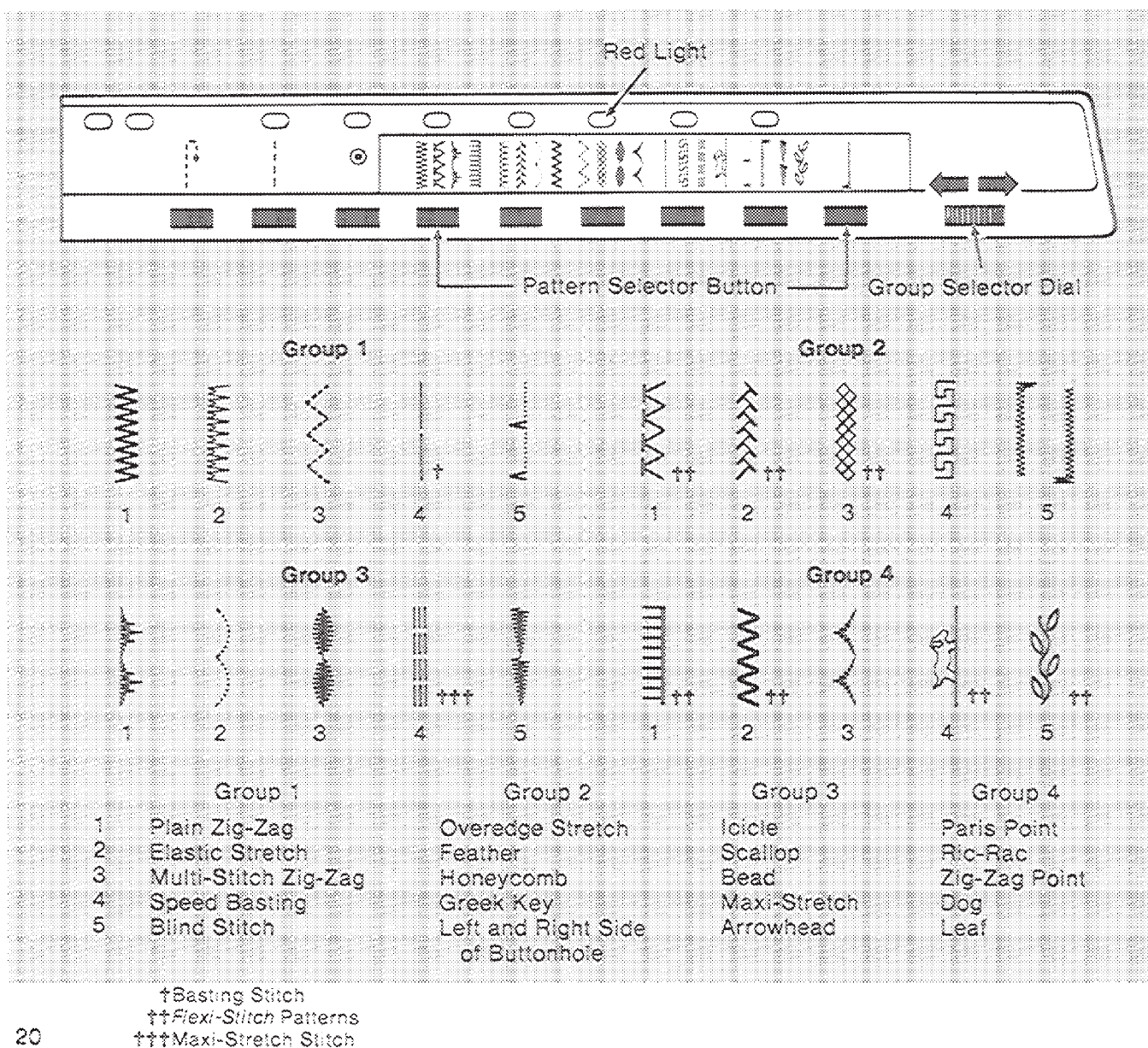
Rotate group selector dial to the right or left, to choose one of four different pattern groups which will contain the particular pattern you wish to sew.

After rotating group selector dial, press button under the desired pattern. A red light will appear above selected pattern.


Stitch width and length are automatically programmed, but can be changed for individual preferences or fabric requirements, as described on page 22.

Follow same procedure for stitch selection to automatically switch to another pattern.

**Note:** We recommend use of the **SLOW** speed setting when sewing buttonholes, basting stitch, decorative patterns, or maxi-stretch stitch.




## PATTERN REPEAT BUTTON

The pattern repeat button  on your machine lets you sew one unit of a pattern. For example; one arrowhead, one dog.

### Procedure

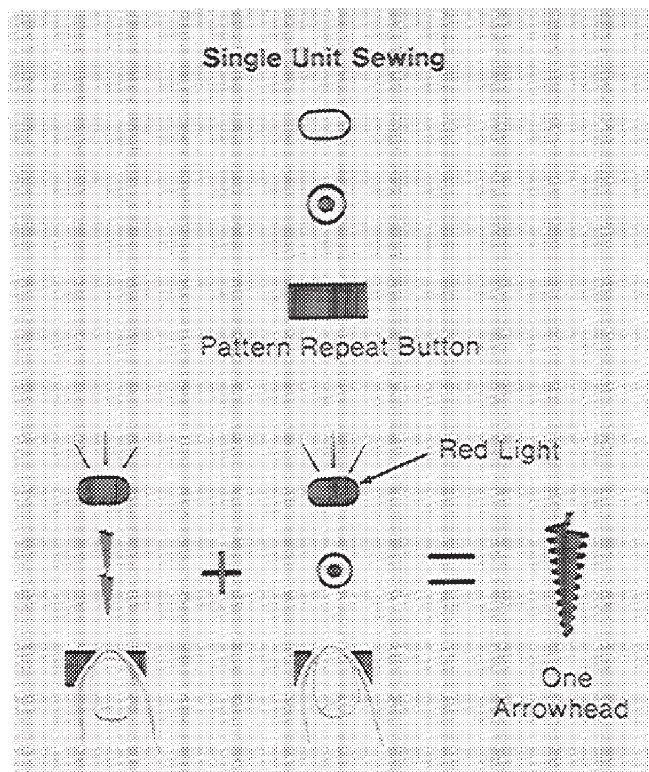
Select desired pattern (such as arrowhead shown here).

Press pattern repeat button .  
Red light will appear above symbol.

Press down on controller.

Machine will stitch one unit of the pattern each time you follow this procedure.

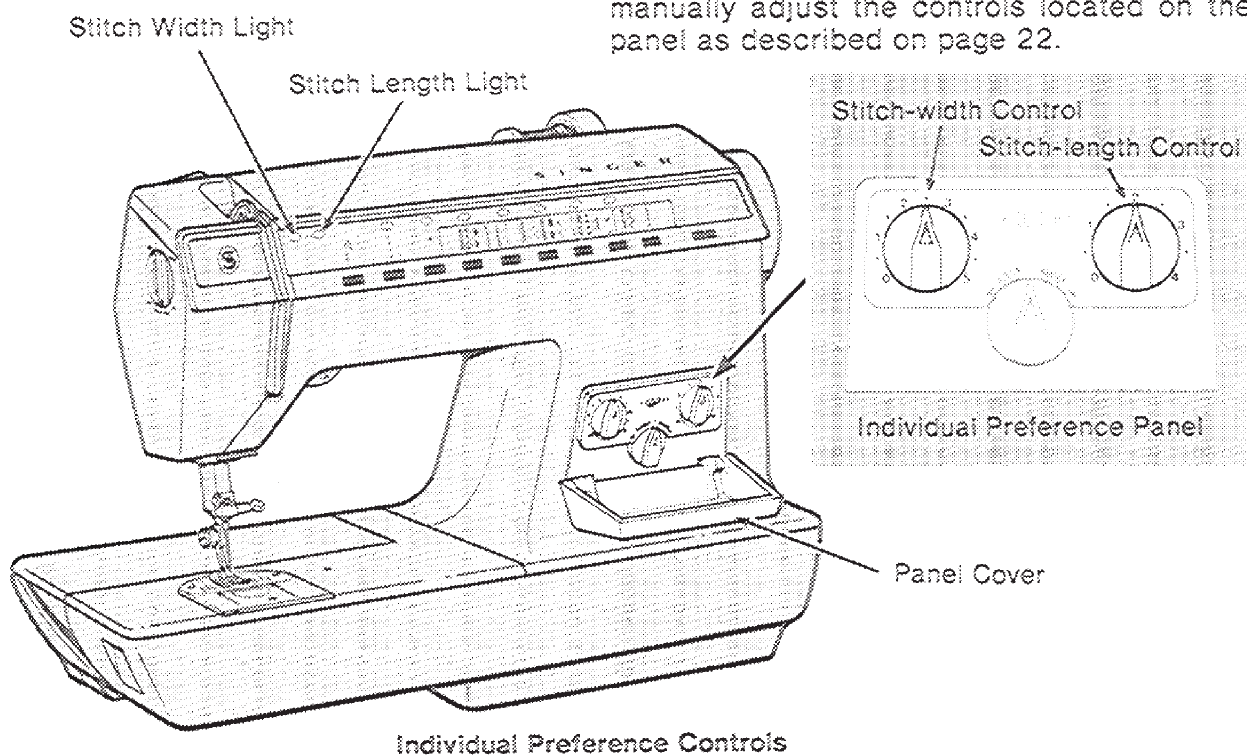
You can also use pattern repeat button to stitch a series of identical buttonholes, as described on page 73; and to aid in bobbin winding as described on page 16.



## INDIVIDUAL PREFERENCES

Your sewing machine will produce most of your stitching requirements at a preprogrammed stitch width and stitch length.

To accommodate different fabric characteristics or satisfy a personal preference, you can change the settings by opening the cover of the individual preference panel and then manually adjust the controls located on the panel as described on page 22.



## *stitch adjustments*

### STITCH WIDTH

- Select desired pattern.
- Open cover of individual preference panel.  
Lightly touch stitch width pointer to activate stitch width control, indicated by a red light on stitch panel.
- Turn pointer slowly and sew until desired width is obtained.

Machine will now stitch at preferred width.

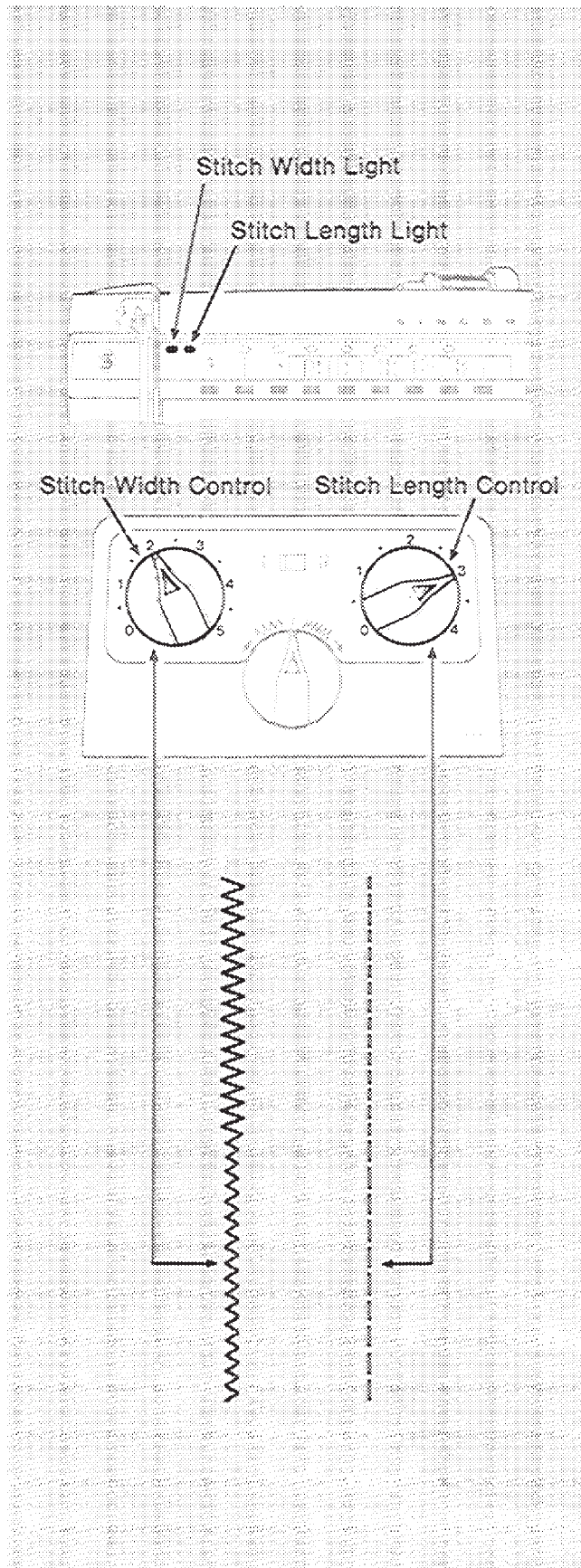
### STITCH LENGTH

- Select desired pattern.
- Lightly touch the stitch length pointer with your finger to activate the stitch length control, indicated by a red light on stitch panel.
- Turn pointer slowly and sew until desired length is obtained.

Machine will now stitch at the preferred length.

**Note:** Both stitch width and stitch length controls may be used simultaneously.

- To cancel, press any button except those for reverse or pattern repeat sewing.



Choosing the correct stitch length is of utmost importance. The correct choice will make the difference in the wear and appearance of your new garment. The table below is a practical guide to stitch length selection. Refer to it before starting a sewing project. *Remember to make a test sample on a scrap piece of the fabric you will be using.*

**STITCH LENGTH GUIDANCE TABLE**

| PART OF ARTICLE OR GARMENT       | WEIGHT OF FABRICS |         |         |         |         |            |
|----------------------------------|-------------------|---------|---------|---------|---------|------------|
|                                  | FILMY             | SHEER   | LIGHT   | MEDIUM  | HEAVY   | VERY HEAVY |
| STRAIGHT MAIN SEAMS              | 1.5 - 2           | 1.5 - 2 | 2 - 2.5 | 2 - 2.5 | 2.5     | 2.5 - 3    |
| CURVED MAIN SEAMS                | 1.5 - 2           | 1.5 - 2 | 1.5 - 2 | 2 - 2.5 | 2 - 2.5 | 2.5        |
| NECKLINE <sup>†</sup> & ARMHOLES | 1.5 - 2           | 1.5 - 2 | 1.5 - 2 | 2 - 2.5 | 2 - 2.5 | 2 - 2.5    |
| STAY STITCHING <sup>†</sup>      | 1.5 - 2           | 1.5 - 2 | 1.5 - 2 | 1.5 - 2 | 2 - 2.5 | 2 - 2.5    |
| GATHERING                        | 3 - 4             | 3 - 4   | 3 - 4   | 4       | 4       | 4          |
| ZIPPERS <sup>†</sup>             | 1.5 - 2           | 1.5 - 2 | 2 - 2.5 | 2 - 2.5 | 2.5     | 2.5        |
| TOP STITCHING <sup>†</sup>       | 3                 | 3       | 3 - 4   | 3 - 4   | 4       | 4          |
| STRESS AREAS OR SEAMS            | 1.5 - 2           | 1.5 - 2 | 1.5 - 2 | 1.5 - 2 | 1.5 - 2 | 1.5 - 2    |

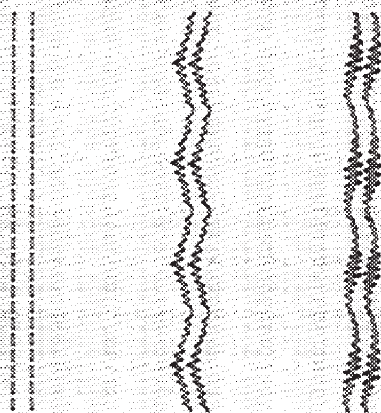
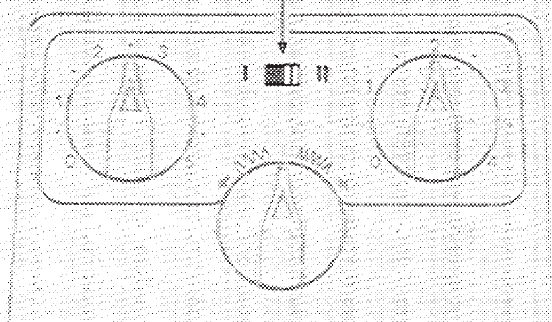
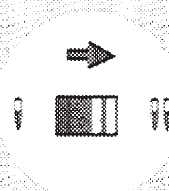
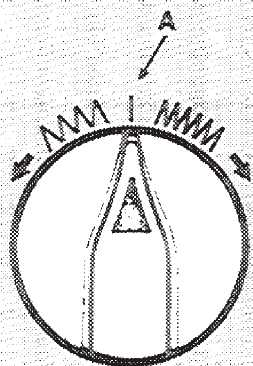
<sup>†</sup> Slow to moderate speed.

### Stress Areas in Knit or Stretch Fabrics

Contrary to common belief it is not always necessary to use a S-t-r-e-t-c-h stitch on all seams in garments made from these fabrics. Always consider the "Stress" areas, for example; armholes, crotch seams, also how much the garment will be required to "give" and where. Use a stretch stitch where needed. Moreover, always ascertain that the fit of the garment is correct before sewing any seam with a S-t-r-e-t-c-h stitch. Ripping out a S-t-r-e-t-c-h stitch is difficult and may damage fabric. See page 46 for sewing on stretch fabrics.



## Reverse Stitch- Balance Control



## REVERSE STITCH-BALANCE

To change the appearance of a *Flexi-Stitch* pattern or buttonholes, adjust the reverse stitch-balance control.

Before moving the pointer from its neutral position, make a test sample.

If adjustment is required, stitch slowly and move the reverse stitch-balance pointer in either direction as you sew, until desired pattern appearance is obtained.

For information on balancing a buttonhole see page 73.

Return pointer to neutral position (A) after sewing *Flexi-Stitch* patterns and buttonholes.

*Flexi-Stitches* illustrated on page 20.

## TWIN-NEEDLE SWITCH

Always move twin-needle switch, located on individual preference panel, to the right ( II ) symbol before doing twin-needle sewing.

**Caution:** Unless switch has been activated, needle breakage can result.

When you have completed twin-needle sewing, be sure to return switch to the left ( I ) position.

See page 68 for twin-needle sewing.

**Remember:** If, when adjusting a control, you accidentally touch another control: re-select desired pattern, then readjust desired control.

Close individual preference panel cover when you have attained desired stitch appearance.

## 4. STRAIGHT STITCHING

### *preparation*

For straight stitching, press button under straight stitch symbol ( | ) on stitch panel.

A red light will appear above symbol to indicate that machine is ready to produce a basic straight stitch.

Straight-stitch needle plate and foot are best for all straight stitching. Use these accessories when fabric requires close control. They are especially helpful for stitching delicate fabrics.

If you use the straight-stitch foot with a needle plate other than the straight-stitch needle plate, be sure to set the machine for straight stitching to prevent possible needle breakage. Note however, that when you use the straight-

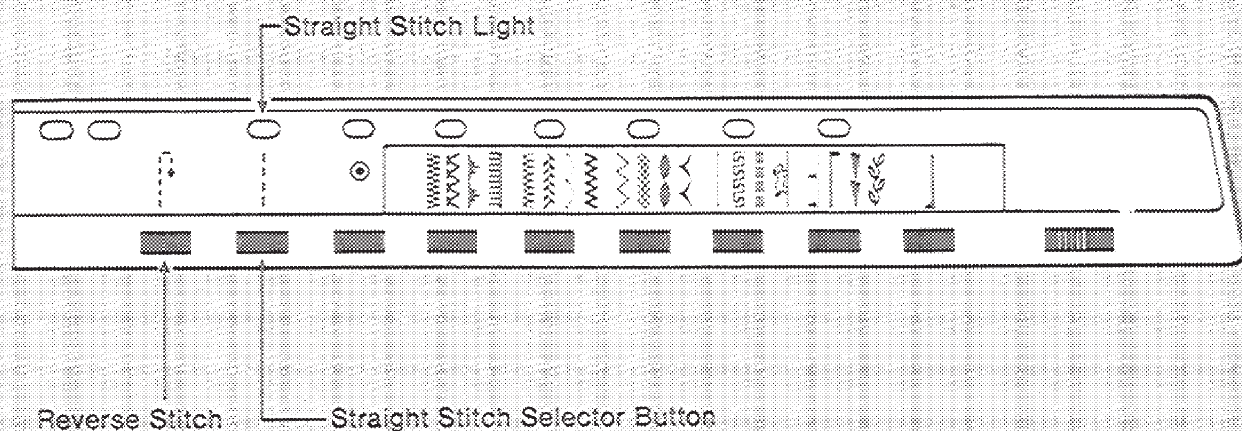
stitch needle plate, you get this exclusive feature: If you press another button by mistake, your machine will still sew a straight stitch.

Always change back to the appropriate needle plate and presser foot when sewing other than straight stitching.

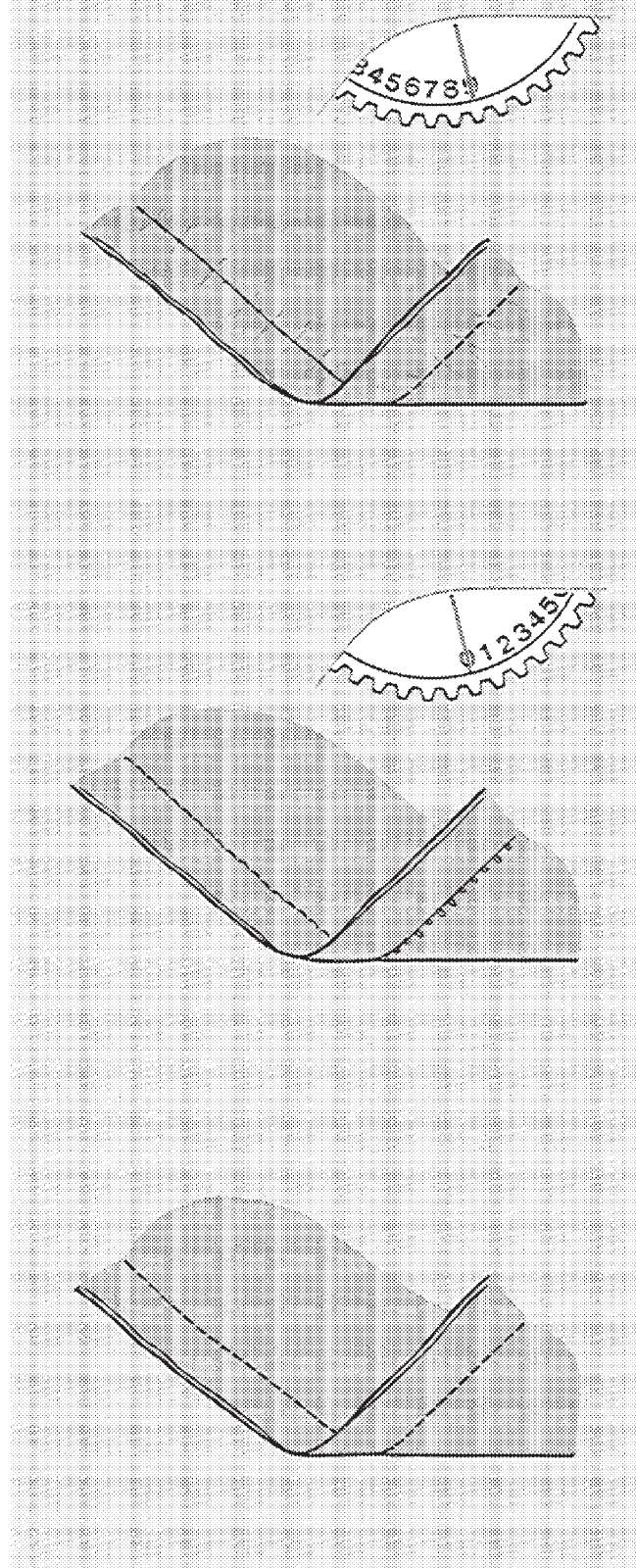
### SEWING IN REVERSE

If you wish to reinforce the beginning or end of a seam, press and hold the reverse stitch button.

Machine will only sew a straight stitch in reverse for as long as you hold the button, regardless of the stitch pattern you have been sewing.



### Needle-Thread Tension



## NEEDLE - THREAD TENSION

Having selected the correct needle and thread combination for the fabric being used, it may be necessary to adjust the tension of the sewing machine to ensure a well balanced stitch.

A well balanced stitch is when the top and under thread appear the same on the fabric.

Your new machine has an adjustable tension control system. This control exerts tension on the top and under thread as they pass through the machine to form a stitch.

- **Too much tension** will produce a tight stitch which will cause puckered seams.
- **Too little tension** will produce a loose stitch.

When an even amount of tension is exerted on both threads, a smooth even stitch known as a balanced stitch, is produced.

### Tension Test

To help understand the effect of tension on fabric and thread, try this simple test:

- Take two pieces of a medium weight woven fabric in a solid light color about six inches long.
- Place a 2020 size 14 needle in the machine.
- Thread the top of your machine with a polyester or mercerized dark color thread and use a lighter color thread of the same fiber and size in the bobbin.
- Select a medium stitch length.
- Seam the two pieces of fabric together starting with the top tension control at "0". Then as you sew, slowly turn the tension control from "0" through to its highest setting.
- Sew another row turning the dial back to "0". You should have a balanced stitch on each row mid-way between the start and finish in each case.
- The different colored threads will help you to see the effect that the tension has on the top and bottom threads.

Now that you have observed the effects of tension, we suggest that you perform a similar test on a scrap of the fabric you plan to use, being sure to duplicate the number of thicknesses of your garment.

# *fabric handling*

## PIN BASTING

Pin basting is a time saver and can be used when you sew easy-to-handle fabrics. Use fine pins and place them so that:

- They are at right angles to the presser foot and just nip into the fabric at the stitching line.
- They do not extend under both sides of the presser foot. Never place pins on the underside of the fabric in contact with the feed.

## SPEED BASTING

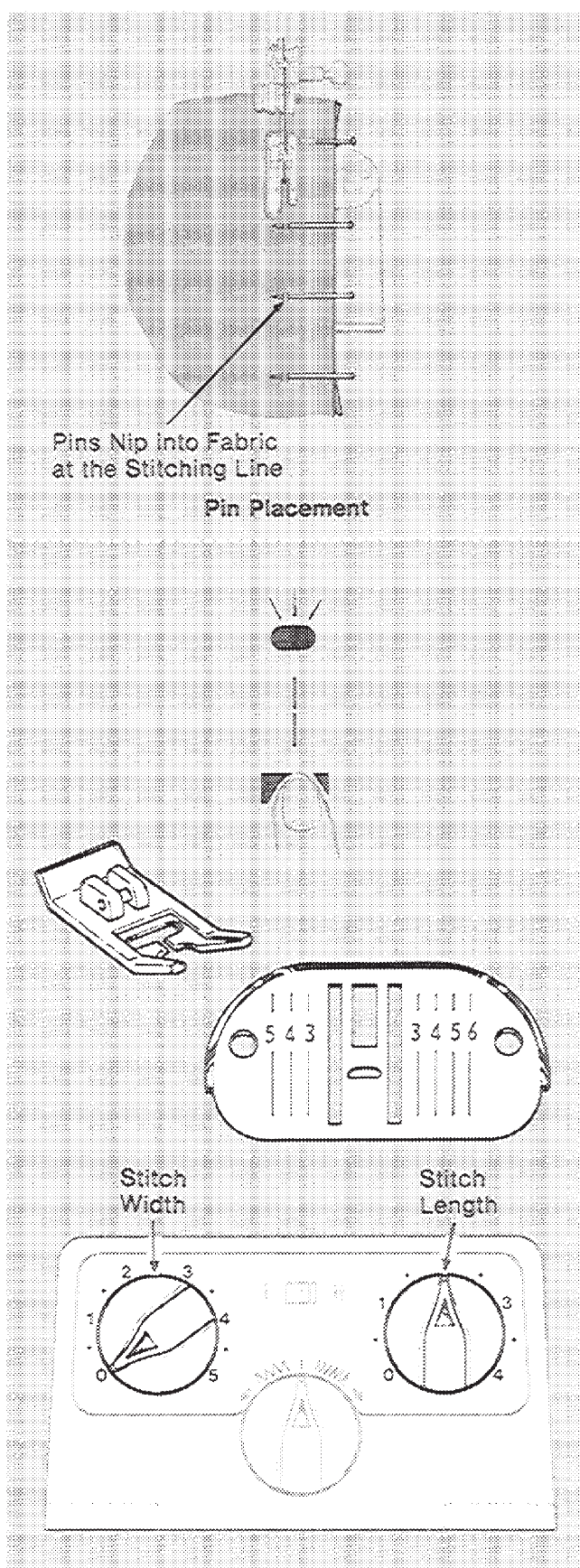
The basting stitch produces temporary long stitches in a variety of lengths. This allows you to choose the correct length for your sewing job, considering the weight of your fabric and how securely the pieces need to be held together. A few of the many sewing jobs for which you will find speed basting particularly useful are:

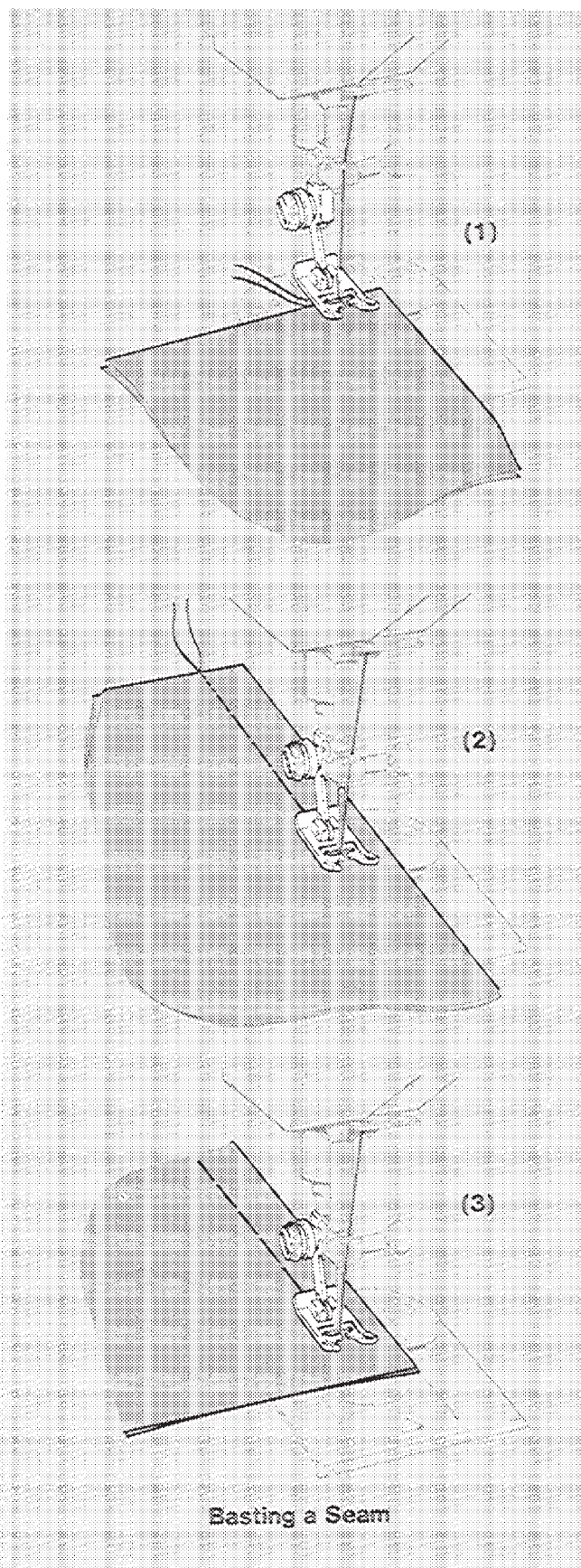
- Joining seams for trial fittings
- Marking construction guidelines
- Basting pleats, hems and seams

- 
- Stitch: speed basting
  - Length: to suit fabric
  - General purpose plate
  - General purpose foot
- 

**Note:** The even feed foot cannot be used for speed basting.

Select needle and thread according to your fabric. A fine needle and a soft pliable thread are recommended when basting stitches are not to be removed before pressing, as in the case of pleats or hems. Choose a thread color to contrast with your fabric so that it can be seen easily.





## Procedure

Thread the machine in the usual way.

1. Set machine for basting at a short stitch length, and take a few stitches to position and secure basting start.
2. Adjust to the length of basting stitch desired—stitches approximately 1 inch (2.5cm) long are recommended for seam basting—and proceed. Stitch slowly, supporting the fabric in front and back of the presser foot if stitches are more than 1/2-inch (1.3cm) long.

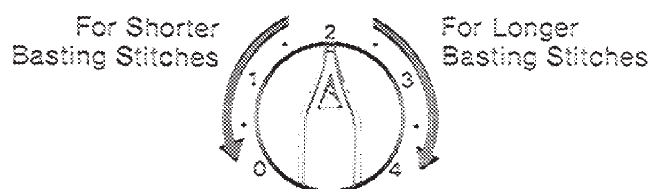
**Caution:** Do not pull the fabric while you are stitching as this may deflect the needle, causing it to break.

3. Take a few short stitches to secure end of basting.

## Stitch Length

The stitch length control dial on the personal preference panel (see page 22) regulates the length of basting stitches. Because the interval at which the needle enters the fabric is changed when you machine baste, the length of the stitch is no longer the same as for regular stitching.

Very short stitches are recommended to fasten stitching starts and endings.



## Thread Tension

Speed basting requires a light needle-thread tension. When tension is correctly adjusted, stitches up to 1 inch (2.5cm) long should lie flat in firm fabrics. If stitches are longer than 1 inch, place tension on the fabric by holding it lightly in front and back of the presser foot as you sew, to prevent pucker.

See page 26 for further information on needle-thread tension.



# sewing a seam

## PREPARATION

- Stitch: straight
- Length: to suit fabric
- Straight stitch needle plate or general purpose plate
- Straight stitch foot or general purpose foot

Thread machine in the usual way.

## PLACE FABRIC UNDER FOOT

Most fabrics can be placed under the foot by raising the presser foot lifter (A) to its normal up position (1), where it locks. When using bulky fabric, multiple fabric layers, or an embroidery hoop, raise the presser foot lifter to the high rise position (2), thus increasing the space between foot and needle plate. Hold presser foot lifter in position while placing fabric under the presser foot.

- Lower presser foot lifter all the way down and start to sew.

## SEWING WITH A NEWLY WOUND BOBBIN

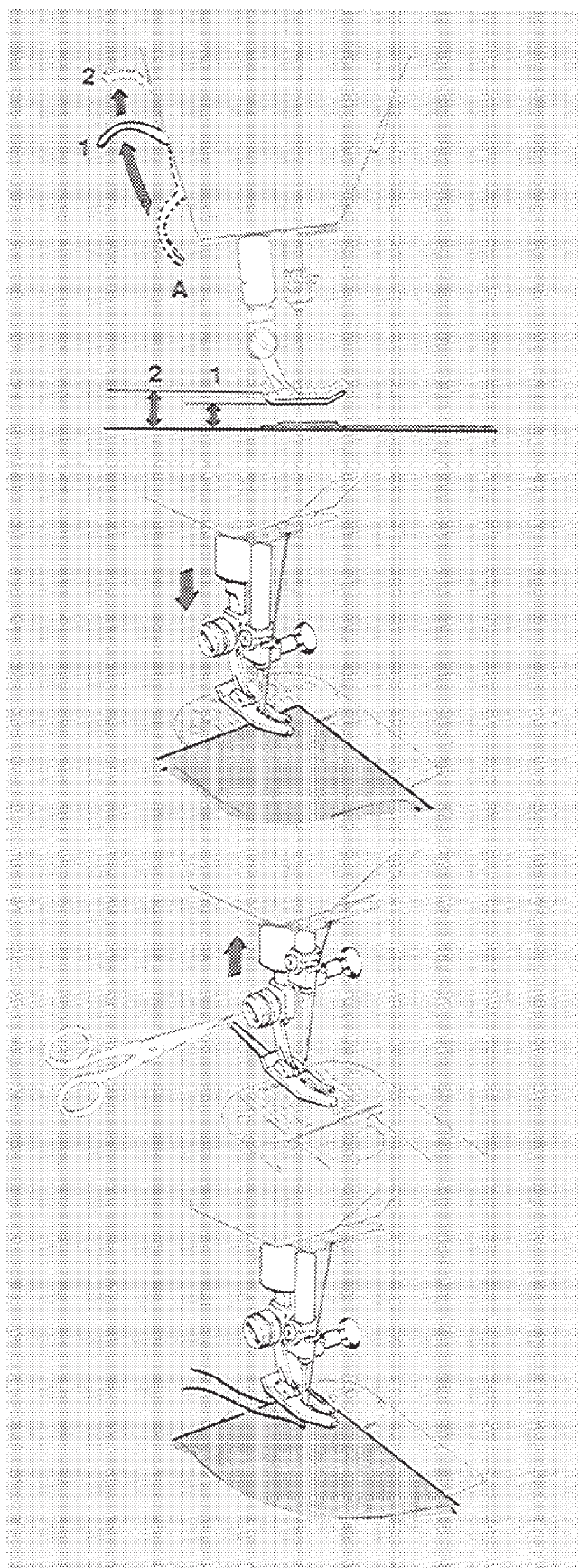
When starting to stitch at the fabric edge:

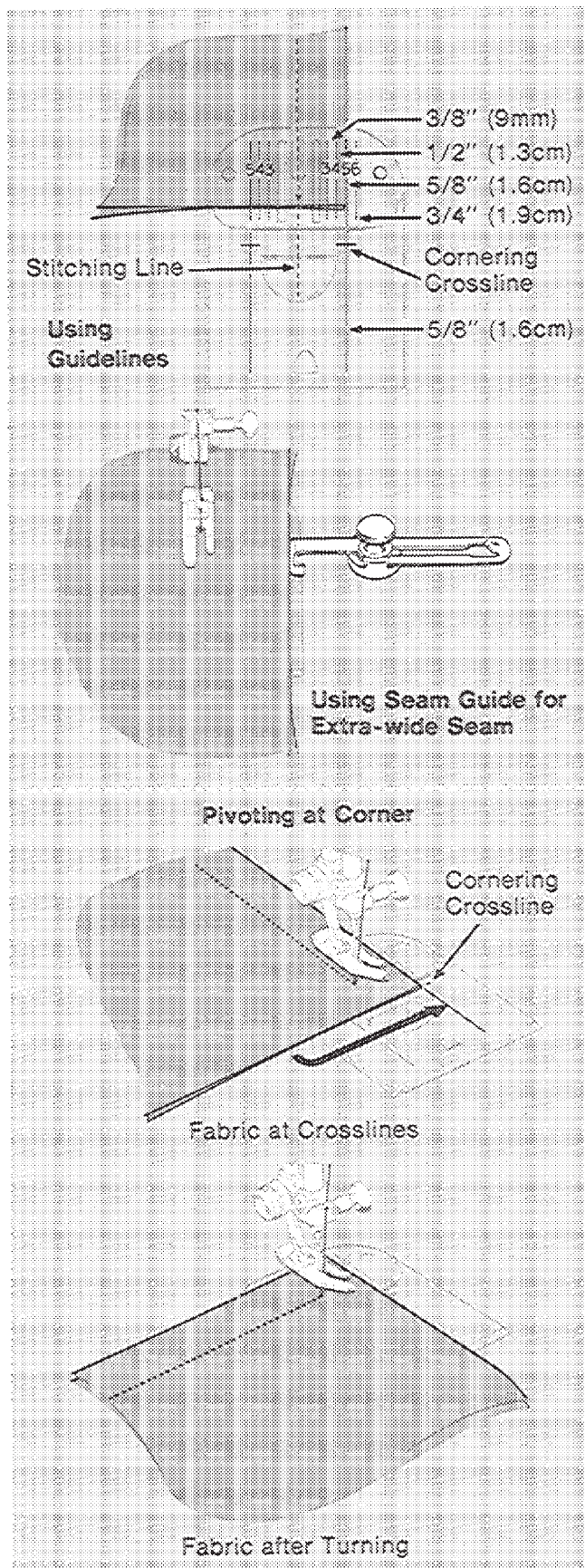
- Position needle in very edge of fabric, by turning the hand wheel *toward you*.
- Lower the presser foot and stitch. Thread will lock over fabric edge.

OR

When starting to stitch away from fabric edge:

- Leave presser foot in its upper position.
- Pull thread back under presser foot and cut.
- Position needle in from fabric edge, then lower the presser foot and stitch.





## KEEPING SEAMS STRAIGHT

To keep the seam straight, use one of the numbered guidelines on the plate. The numbers indicate distance, in eighths of an inch, from the needle. If you want a 5/8-inch (1.6cm) seam, for example, line up your fabric with the number 5 guideline. Note that both number 5 guidelines (the most commonly used) are extended on the slide plate for your convenience; the crosslines serve as guides when stitching a square corner.

For extra help in keeping the seam straight, you may wish to use the seam guide. Because it allows you to guide stitches evenly between 1/8-inch (3mm) and 1-1/4 inches (3cm) from the fabric edge, it is particularly useful for very narrow or very wide seams.

To insert seam guide on machine see page 8.

## TURNING SQUARE CORNERS

To turn a square corner 5/8-inch (1.6cm) from the fabric edge, you need not measure or mark the seam. Simply use the crosslines on the slide plate.

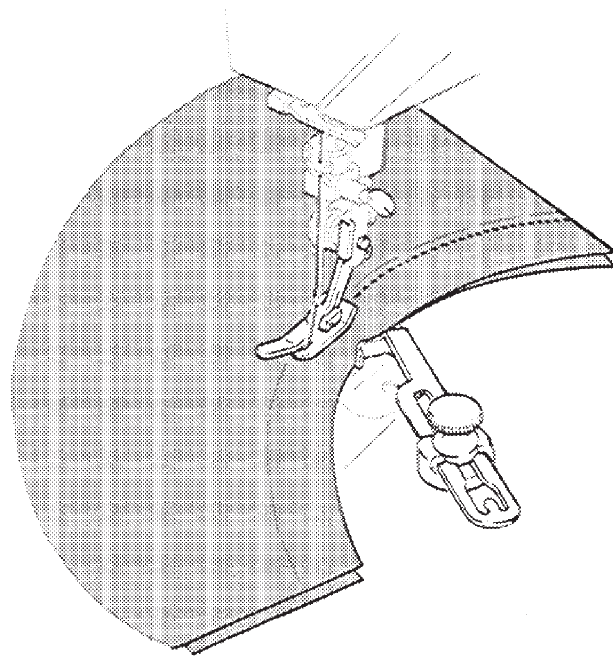
- Line up your fabric with right or left guideline 5 on the plate. Stitch seam, slowing speed as you approach corner.
- Stop stitching, *with the needle down*, when the bottom edge of the fabric reaches the cornering crosslines on the slide plate.
- Raise presser foot *slightly* and turn fabric on needle, bringing bottom edge of fabric in line with guideline 5.
- Lower the presser foot and stitch in new direction.

## CURVED SEAMS

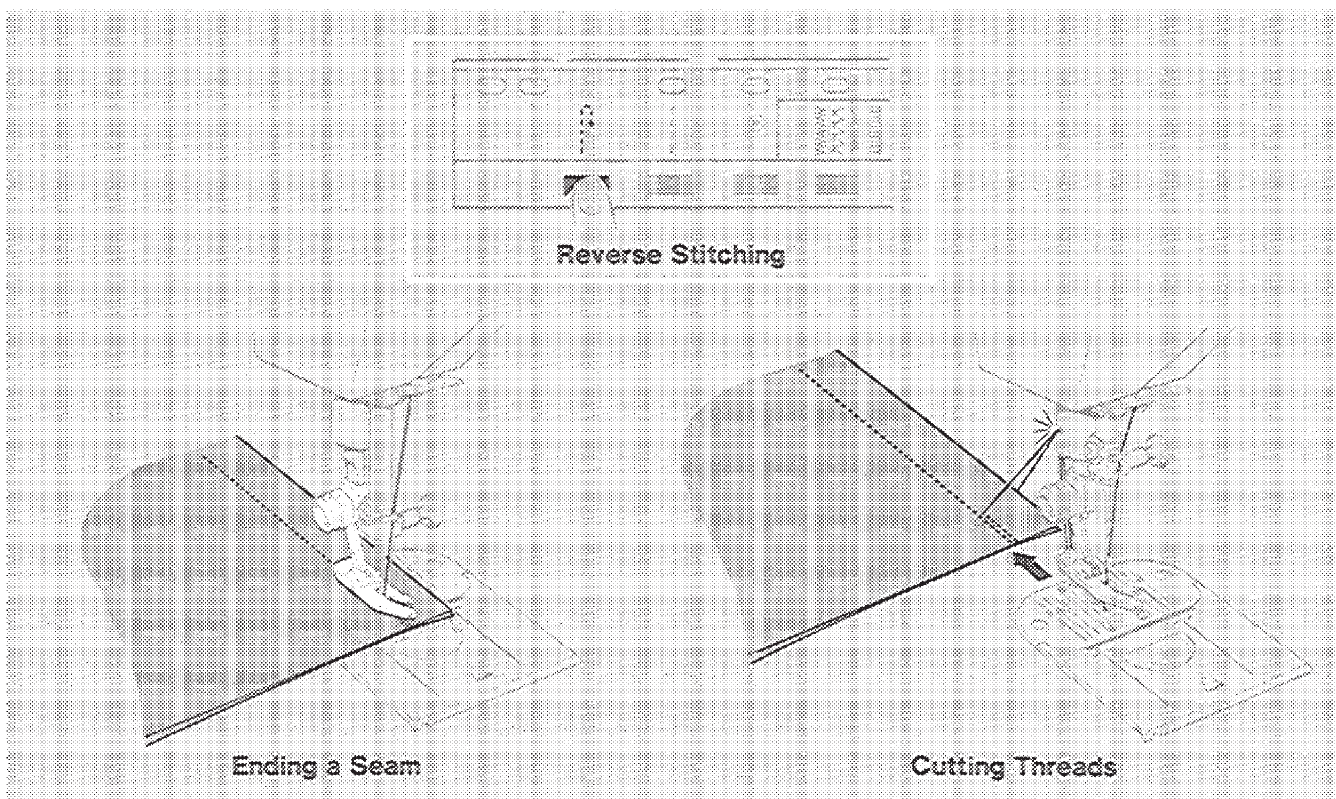
1. For example, if the stitch length control on your machine is set on 2 the machine will sew approximately 12 stitches to the inch for straight seams. Adjust the control between 1.5 to 2 or 15 to 20 stitches per inch to stitch curved seams in the same fabric.
2. If you use the seam guide, attach it at an angle so that the edge that is closer to the needle acts as a guide.

## REINFORCING END OF SEAM

1. Stitch to the edge of the fabric. (Do not sew beyond edge of fabric)
2. Press reverse stitch button and hold in place. Backstitch approximately 1/2-inch (1.3cm) to reinforce end of seam. Release reverse stitch button.
3. Raise needle to its highest position by turning hand wheel *toward you* and raise presser foot. Remove the fabric by drawing it to the back and left.
4. Cut threads on thread cutter at rear of presser bar.



Stitching a Curved Seam



# applications

## DARNING

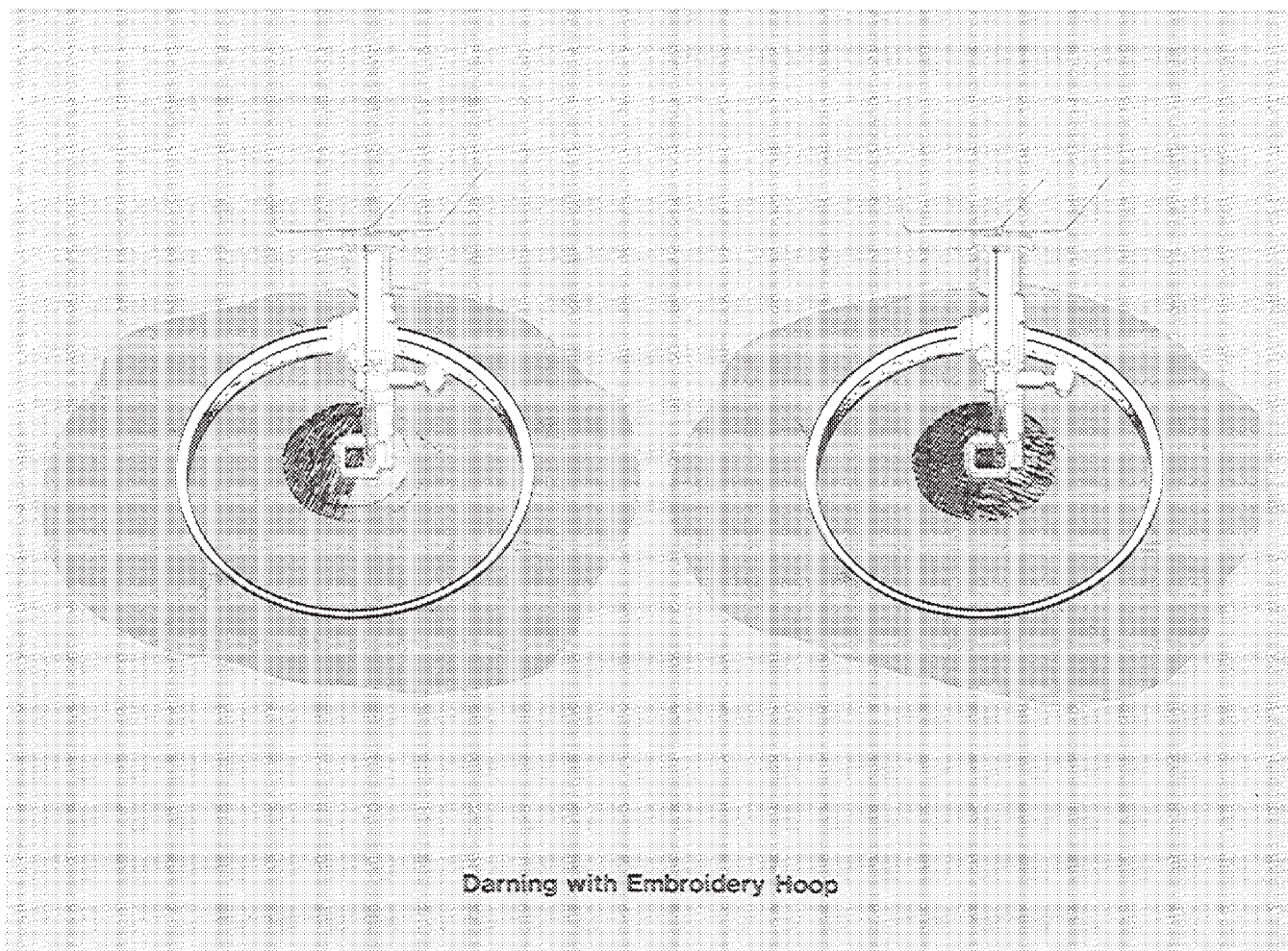
Worn or torn spots on children's clothes, knits, and household linens can be darned effortlessly and quickly with little practice. You may choose to darn either with or without accessories. When greater control is needed, use the accessories.

### With Accessories†

- Stitch: straight stitch |
- Stitch length: 0
- Cover plate
- Darning and embroidery foot

1. Trim ragged edges from area to be darned and center worn section in embroidery hoop.

2. Select straight stitch.
3. Position work in hoop and place hoop under foot, *then lower the presser bar to engage tension.*
4. Hold needle thread loosely with left hand, turn hand wheel *toward you*, and draw bobbin thread up through fabric. Hold both thread ends and lower needle into fabric. Snip off after a few stitches.
5. Outline area to be darned with running stitches for reinforcement as illustrated.
6. Stitch across opening, moving hoop back and forth under foot. Keep lines of stitching closely spaced and even in length.
7. When opening is filled, cover area with crosswise lines of stitching.



†For best results, hinged plate should be up when darning with embroidery hoop.

## DARNING

### Without Accessories

- Stitch: straight stitch |
- Stitch length: between 1 and 1.5
- General purpose needle plate
- Special purpose foot
- Pressure setting: (darn) ■■

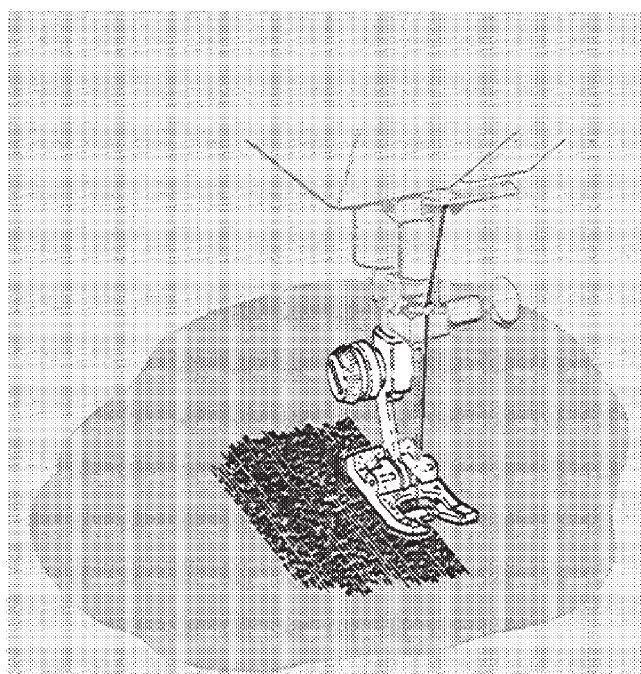
1. Select straight stitch.
2. If area to be darned is open, baste an underlay in place.
3. Place area to be darned under presser foot; lower presser foot and start stitching, alternately drawing fabric *toward* you and pulling it *gently away* from you.
4. Continue this forward and backward motion as you fill the area with parallel lines of stitching. For additional strength, cover area with crosswise lines of stitching.

## HESITATION EMBROIDERY

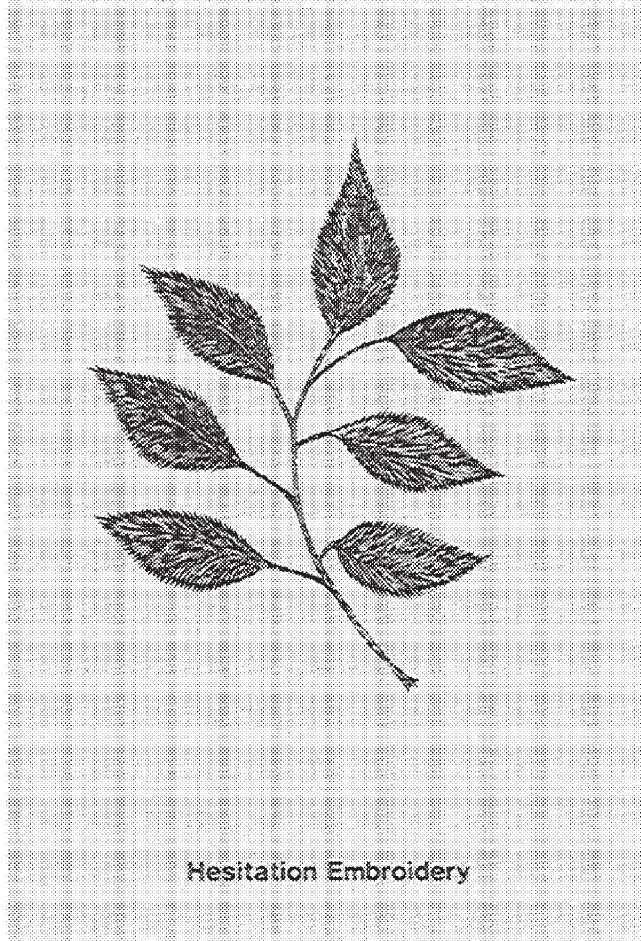
Hesitation embroidery is free-motion embroidery using speed basting. The time lapse that occurs between needle penetrations permits unhurried hoop movement (appreciated by the beginner). It also permits unusually long stitches, as well as short ones for unique decorative effects.

- Stitch: basting stitch |
- Stitch length: 0
- Cover plate
- Darning and embroidery foot
- Speed range: **SLOW**

1. Trace or transfer design outline to fabric and center in embroidery hoop. Designs and motifs with shaggy outlines and textured surfaces are usually best.
2. Select speed basting.
3. Position hoop under needle, lower presser bar, and raise bobbin thread.
4. Move hoop back and forth, filling design with long and short stitches as in regular free-motion embroidery, as described on page 45.



Darning Without Accessories



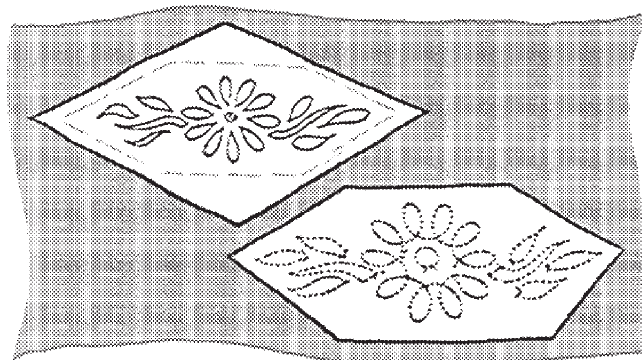
Hesitation Embroidery





## QUILTING

Quilting is the art of stitching two or more thicknesses of fabric together in a planned design. A padding is stitched to the underside of the fabric to produce a soft, puffed effect that is becoming to some wearing apparel and to many fabric furnishings.



- Stitch: straight stitch
- Stitch length: to suit fabric, design, and effect desired
- General purpose needle plate
- Straight-stitch foot

**Note:** For best results use the quilting foot available for separate purchase at your local Singer store.

### Preparing the Fabric

Baste a light padding of cotton flannel, synthetic quilt batting (split), sheet wadding, or a lightweight wool interlining to the underside of the fabric. When using sheet wadding, first back it with voile, batiste, or net to preserve the sheet wadding through wear. Baste the layers of fabric together on the lengthwise and crosswise grains.

### Basic Procedure

1. Select straight stitch.
2. Draw both threads under the foot and diagonally across feed to left.
3. Position the needle, lower the foot and start stitching.

**Note:** If you are quilting a very large piece, work from the center of the fabric to the edges. Guide the fabric with both hands.

If the fabric has a floral or scroll design, the pattern in the fabric can be your quilting design. Stitch it from the top side.

## CHAINSTITCHING

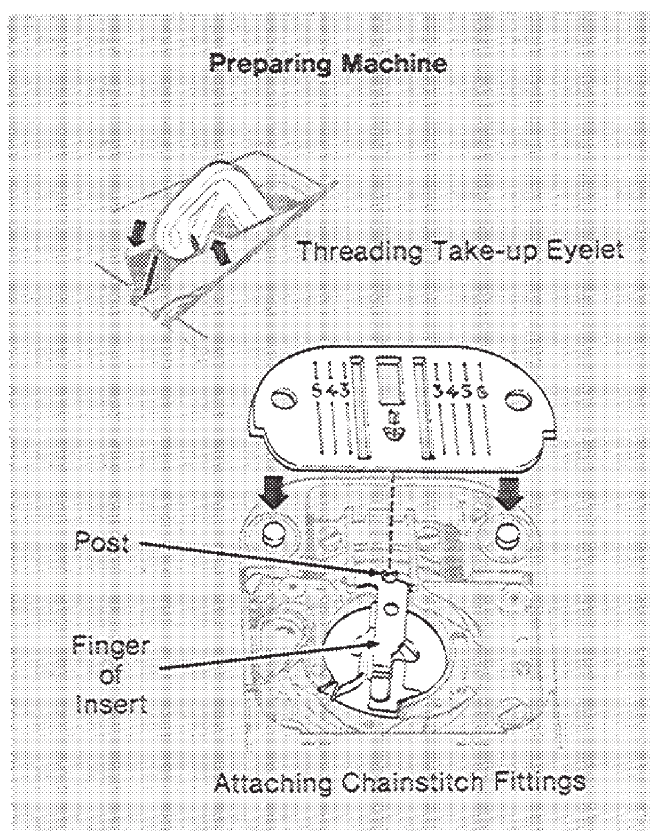
Single-thread chainstitching looks like regular straight stitching on top but is a series of interlocking loops on the underside of the fabric. The stitches are produced by the needle thread alone so you do not need a bobbin thread or a bobbin. Because the stitches are formed by a single thread, the interlocked loops ravel easily, allowing the entire line of stitching to be removed with just a pull on the thread end.

Here are a few of the many sewing jobs for which you will find chainstitching useful.

- Sewing temporary hems and tucks to extend the life of children's clothes, and curtains and linings that might shrink.
- Hemming curtains and draperies that may need to be altered.
- Attaching woven and stretch hem tape.
- Making stay chains (French tacks) to anchor linings.
- Basting for trial fittings.

### Preparation

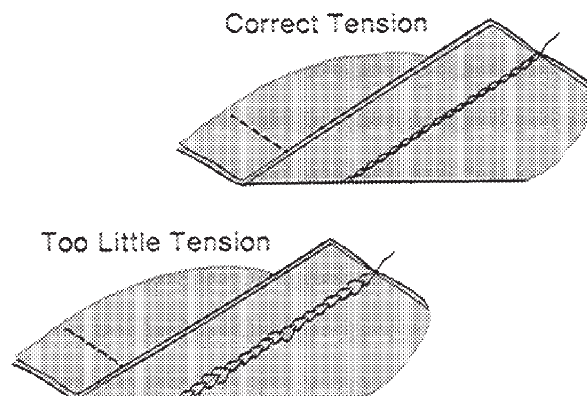
- Select needle and thread according to your fabric. (See Fabric, Thread and Needle Chart on page 12.) Thread the machine in the usual way except for the take-up lever. *For chainstitching, pass the thread through the triangular eyelet as shown.*
1. Raise take-up lever to its highest position and raise presser foot. Open slide plate.
  2. Move bobbin latch to left and remove bobbin and plate.
  3. Place bobbin-case insert in bobbin case as shown, with *finger of insert positioned under the feed.*
  4. Position chainstitch plate over holding pins, making certain that the post of the bobbin-case insert finger enters the hole in the plate. Close slide plate.

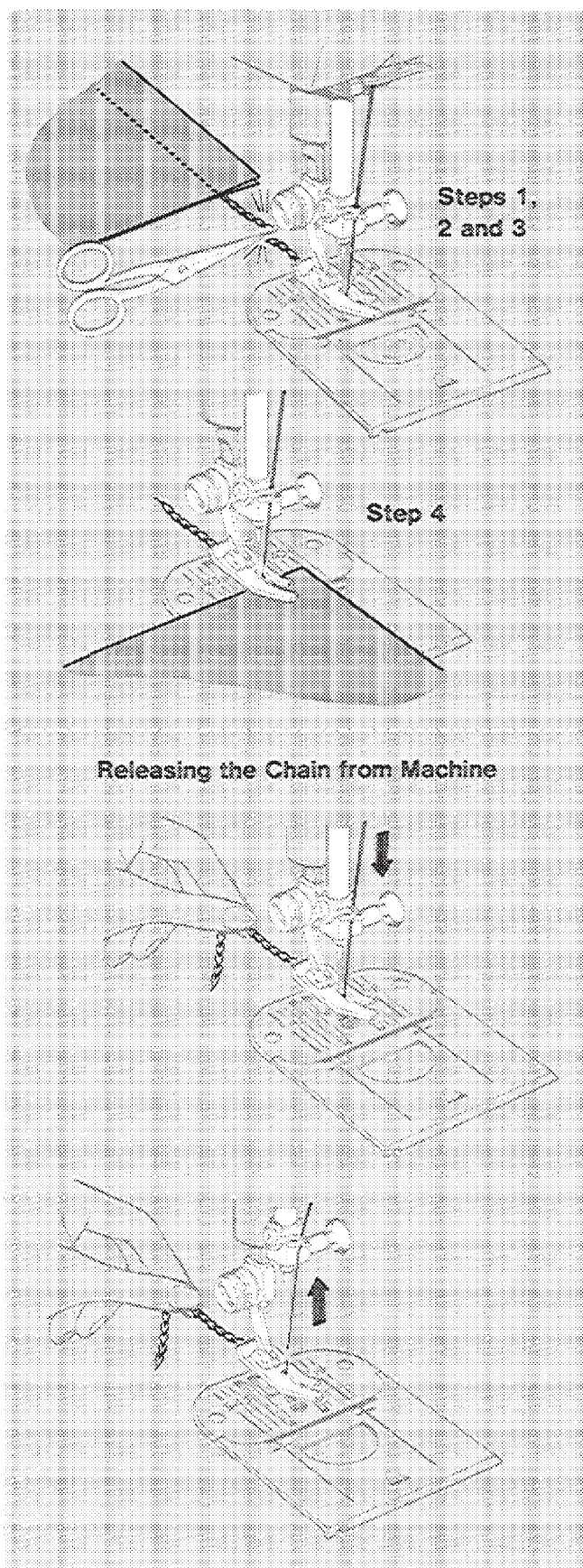


### Adjusting Tension

To find the correct tension setting for chainstitching, set the tension dial on **3** and make a test sample in your fabric. If the loops in the chain on the underside of the fabric are loose and irregular in size, increase tension. When the tension is correctly adjusted, the chain will be flat and smooth and the fabric unpuckered.

- **To increase tension**, turn dial to a higher number.
- **To decrease tension**, turn dial to a lower number.





## SEWING A CHAINSTITCH SEAM

- Stitch: straight stitch
- Stitch length: 2.5-3
- Bobbin case insert
- Chainstitch needle plate
- Straight stitch foot

### Starting and Chaining Off

1. Turn hand wheel *toward you* to position needle in very edge of fabric. Lower the presser foot.
2. Start the machine, and stitch to end of seam. Continue stitching beyond edge of fabric, making a chain from one to two inches long (2.5 to 5cm). *Do not attempt to stitch in reverse.* Chainstitching can be sewn in a forward direction only.
3. Cut chain between fabric and presser foot.
4. After chaining off, start a new line of stitching by raising the presser foot slightly and positioning the fabric in front of needle. Lower presser foot and stitch to end of seam.

### Releasing the Chain from the Machine

When you finish chainstitching, the chain can easily be removed from the machine.

1. Raise presser foot.
2. Hold end of chain with your left hand.
3. Turn hand wheel slowly *toward you* with your right hand until needle is all the way down in the needle hole.
4. Then turn hand wheel slowly *away from you*, pulling gently on chain, which will unravel as needle rises.

**Note:** This is the only time you should ever turn hand wheel *away from you*.

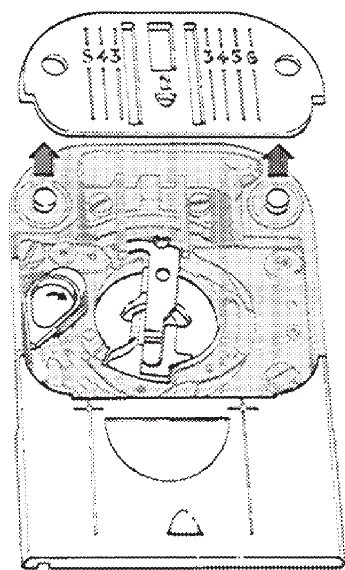
## Removing Stitching from Fabric

Chainstitching can be removed smoothly and cleanly in seconds by freeing the last stitch formed in the fabric.

1. Simply cut the last loop formed on the underside of the fabric.
2. Pick up the free thread end from the top of the fabric.
3. Pull the free thread end, removing entire line of stitching.

## Removing the Chainstitch Accessories

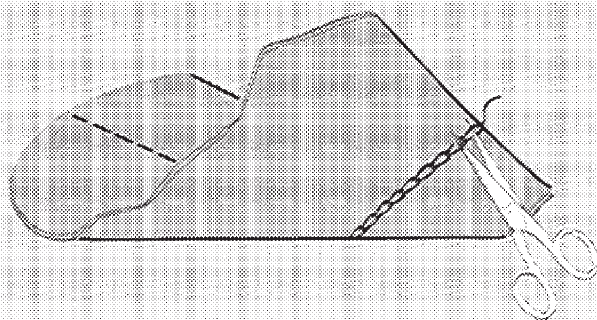
- Raise take-up lever to its highest position and raise presser foot.
- Open slide plate and remove the chainstitch plate.
- Move bobbin latch to left and lift out the bobbin-case insert.
- Replace zig-zag or straight stitch plate and bobbin (see pages 8 and 17). Close slide plate.
- Unthread chainstitch eyelet in take-up lever and rethread for regular sewing.



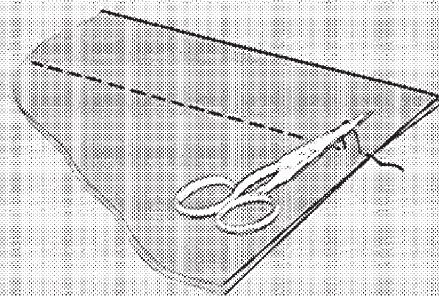
Removing Chainstitch Plate

## Removing the Stitching

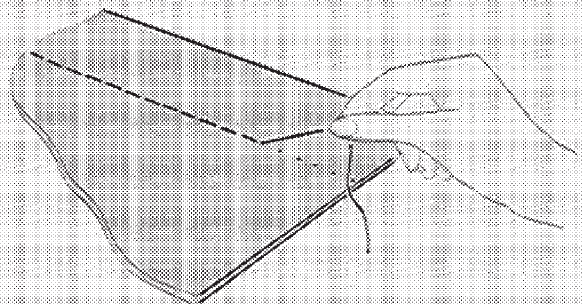
1

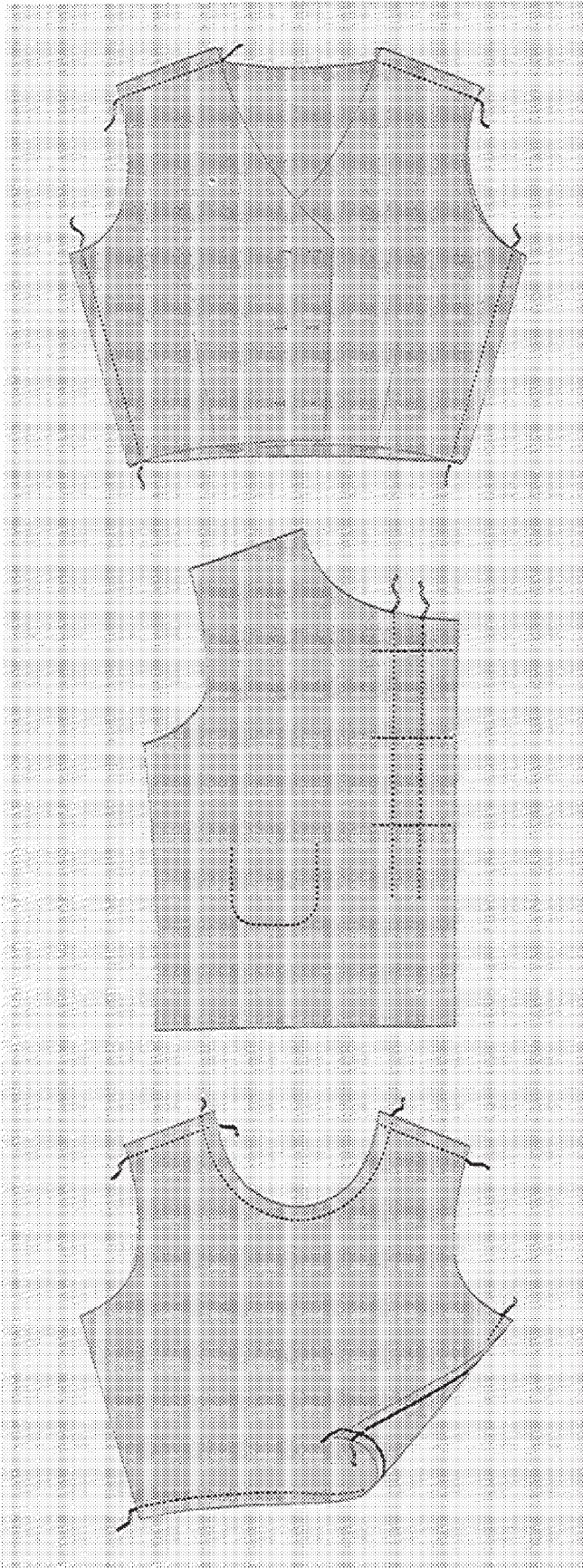


2



3





## CHAINSTITCH APPLICATIONS

Here are several ways in which you will find chainstitching quicker than either regular straight stitching or hand basting.

### Garment Fitting

Time and energy can be saved when chainstitching is used to baste garment sections or muslin shells for trial fittings. The firmness of the stitch ensures accuracy in fitting, yet the stitching can be ripped out in seconds if adjustments are necessary.

### Construction Guidelines

In many instances, construction guidelines for pockets, buttonholes, and other details can be advantageously marked with chainstitch basting. The stitching will give a clearly defined line marking. Yet, unlike chalk or pins, it will not rub off or become lost as the fabric is handled. This method lends itself particularly to use on wools and other fabrics that do not retain the penetration marks of the needle.

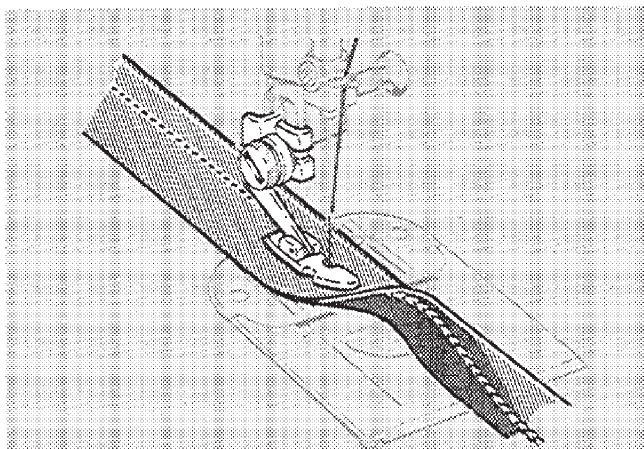
### Stay Stitching

Chainstitching can be used to stay-stitch necklines, shoulderlines, and waistlines before garment assembly. Flexible, yet firm, this stitching will hold the original shape of these areas and prevent stretching.



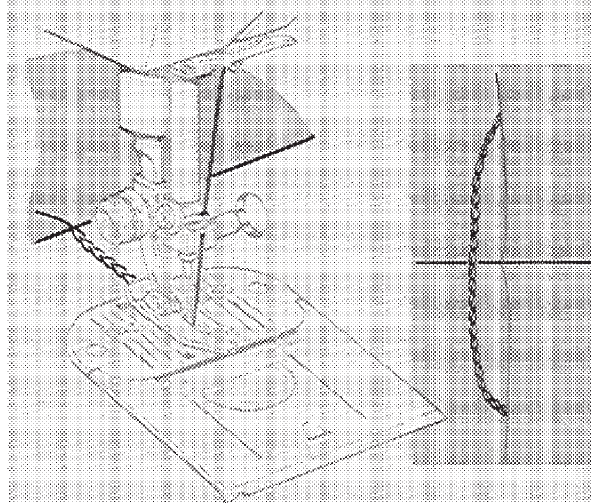
### Slipcover Welting — Tubular Trimming

Chainstitching has an affinity for fabrics cut on the bias. The loop formation of the chainstitch is a natural for corded welting and tubular trimming where a certain amount of elasticity is needed to prevent stitches from “cracking”.



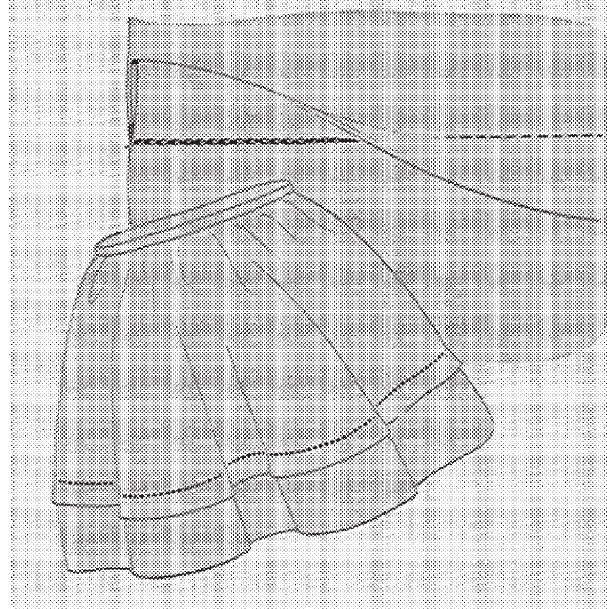
### Belt Carriers and Stay Chains

Stay chains (sometimes called French tacks) and belt loops, normally time-consuming hand-worked detail finishes, can now be quickly made by machine. To produce a chain, place the first stitch in the fabric. Stitch off fabric and continue stitching until a sufficient length of chain is produced. Thread chain through embroidery or darning needle and tack to garment or lining. A stitch length setting of 12 is recommended.

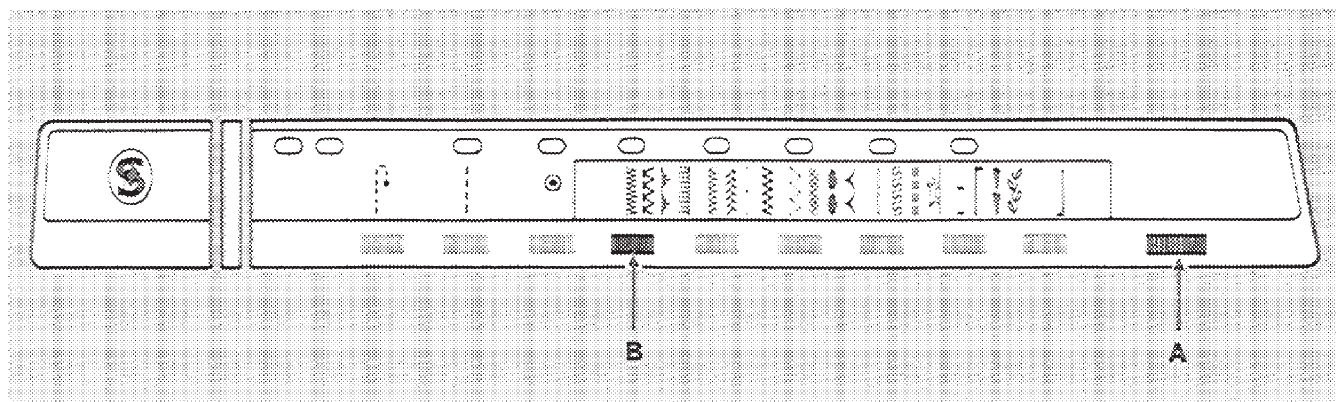


### Growth and Shrinkage Tucks


Tucks are frequently put into curtains, linings, and children's clothes to allow for fabric shrinkage and child's growth. “Letting down” is no longer a chore when tucks are chainstitched. Simply unlock the last loop of the chain formed on the underside of the tuck and pull out the stitching.



## 5. BASIC ZIG-ZAG STITCHING



### *zig-zag stitching*

- Stitch: zig-zag 
- Stitch width: to suit fabric
- Stitch length: to suit fabric
- General purpose needle plate
- General purpose foot

### PROCEDURE:

- Rotate the group selector dial (A) to the right as far as it will go. The zig-zag symbol will now appear in the yellow field above pattern selector button (B).
- Press pattern selector button (B). A red light will appear above the zig-zag symbol to indicate that machine is ready to produce a basic zig-zag stitch at maximum stitch width and medium stitch length.

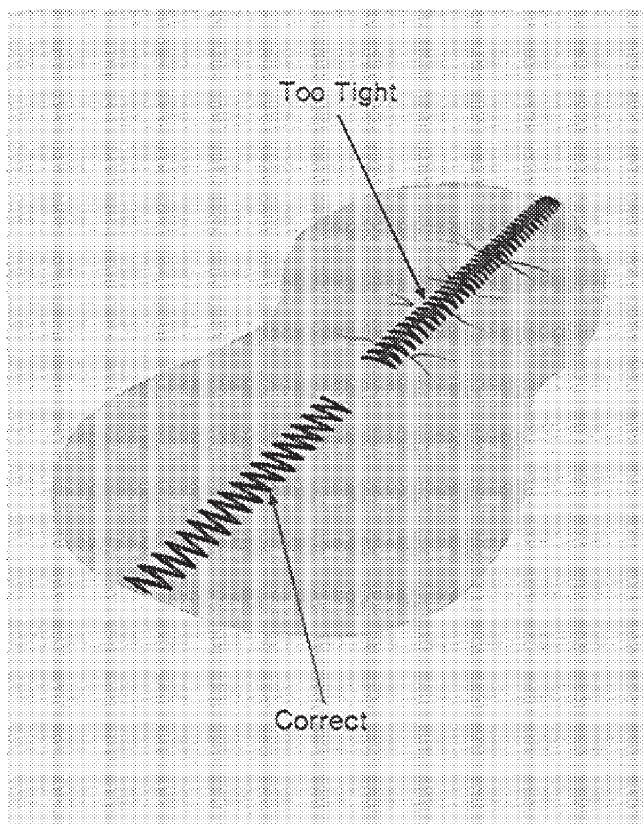
### CHANGING STITCH LENGTH AND STITCH WIDTH

- To change stitch length or width see page 22 in Chapter 3, Electronic Sewing.

### ADJUSTING NEEDLE-THREAD TENSION

Zig-Zag stitching usually requires less needle-thread tension than straight stitching. Be sure your machine is threaded correctly and make a test sample with the fabric and thread you plan to use so that you can adjust tension to suit the stitch pattern you have chosen. The stitches should lie flat against the fabric without causing the fabric to pucker.

If the stitches are not flat and the fabric is puckered, lower the needle-thread tension by turning the dial to a lower number.





## *creative applications*

Zig-zag stitching has found a solid place in home sewing. The zig-zag stitch can be used creatively as well as practically. The following examples are effective uses of the zig-zag stitch. The results are left up to your imagination and ingenuity.

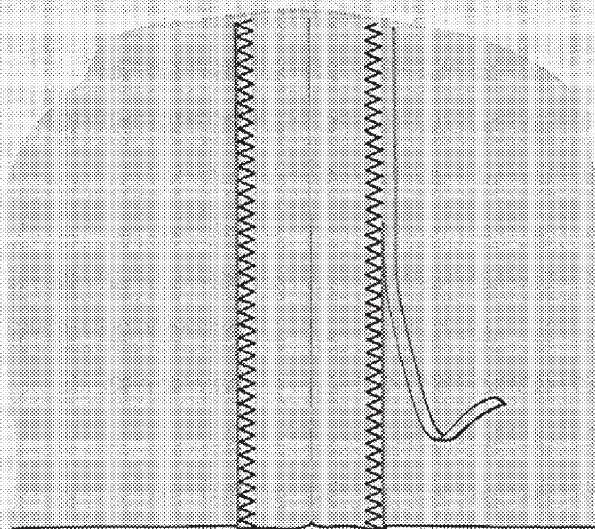
### **ZIG-ZAG SEAM FINISHES**

Seam edges support the garment and should be given a durable finish if the fabric is likely to ravel. There are two methods of finishing seams in such fabrics: method 1, trimming after stitching seam edge, or method 2, over-  
edging. Make a test sample first to determine which method best suits your fabric.

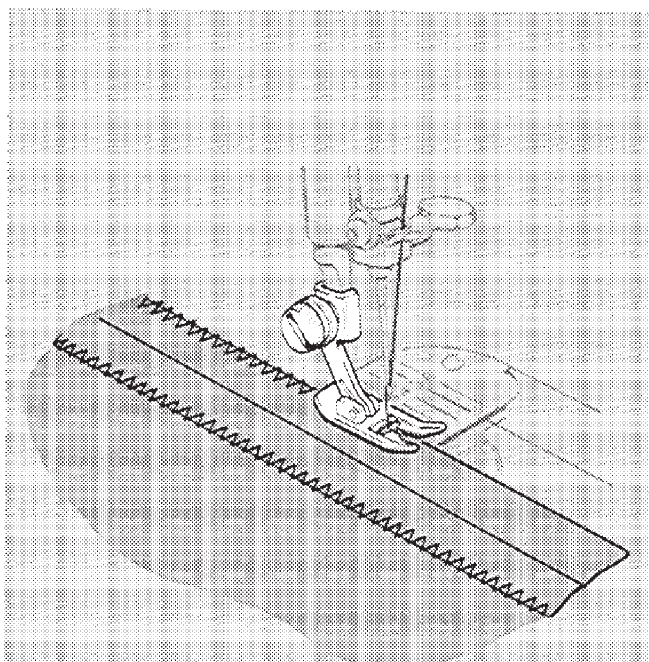
### **Method No. 1 — Trimmed Seam Finish**

- Stitch: zig-zag  or multi-stitch zig-zag 
- Stitch width: to suit fabric
- Stitch length: to suit fabric
- General purpose needle plate
- General purpose foot

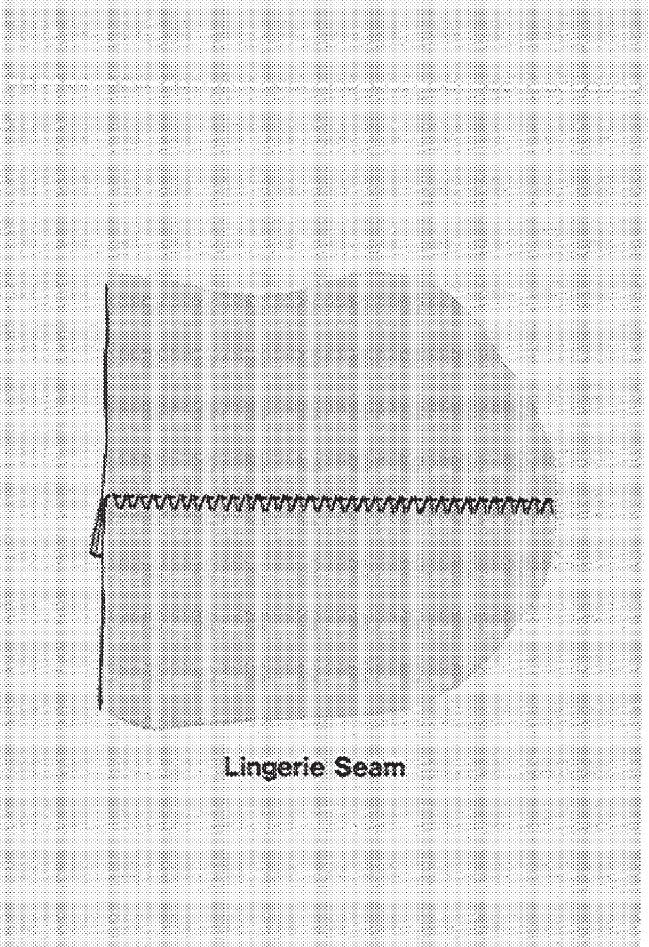
1. Select appropriate stitch pattern.
2. Adjust stitch width and length if necessary.
3. Place stitching near the edge of the seam allowance.
4. Trim seam edges evenly, as shown, after stitching is completed.



**Trimming Edges**





**Overedged Finish**




**Lingerie Seam**

## **Method No. 2 — Overedged Seam Finish**

- Stitch: zig-zag  or multi-stitch zig-zag 
- Stitch width: to suit fabric
- Stitch length: to suit fabric
- General purpose needle plate
- General purpose foot

1. Adjust stitch length and width if necessary.
2. Trim seam edges evenly.
3. Place stitching over the trimmed edge of the seam allowance as illustrated.


## **LINGERIE SEAMS**

- Stitch: zig-zag 
- Stitch width: narrow or to suit fabric
- Stitch length: to suit fabric
- General purpose needle plate
- General purpose foot

To make a lingerie seam durable and flexible, use the plain zig-zag stitch at a narrow width setting. This seam treatment is particularly suitable for bias seams. When seaming nylon tricot, insert a *Yellow Band* needle in the machine before you begin to sew.

- Straight-stitch the seam on wrong side of fabric.
- Press both seam allowances in the same direction.
- From the right side, topstitch with narrow zig-zag stitching, letting the needle alternately enter the seam line and the seam thickness.

## SATIN STITCHING

- Stitch: zig-zag 
- Stitch width: to suit fabric
- Stitch length: 0 to 1
- General purpose needle plate
- Special purpose foot

**Note:** Other decorative stitch patterns except stretch stitch patterns, may be sewn at satin-stitch length.

Satin stitching, a series of closely spaced zig-zag stitches that form a smooth, satin-like surface, is useful for both utility and decorative work. It is accomplished by sewing a zig-zag stitch with stitch length pointer in the area between 0 and 1. For best results, the special purpose foot must be used.

When you wish to produce a satin stitch, make a test sample first so that you can adjust the stitch length and thread tension properly.

Soft fabrics may require a backing to ensure firm satin stitching. Crisp organdy or lawn is suitable for this purpose.

### Adjusting Stitch Length for Satin Stitching

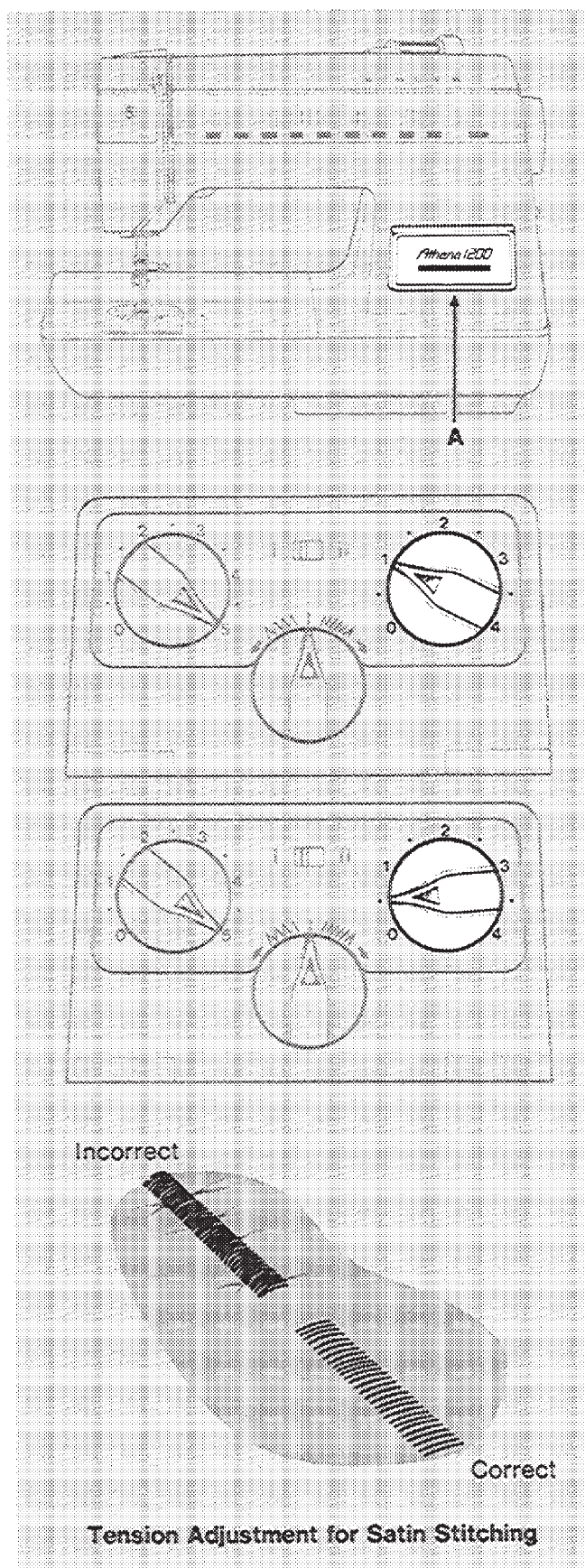
1. Open the personal preference panel, (A).
2. Run the machine at a slow speed.
3. Gradually move pointer from 1 toward 0 by rotating the pointer downward until stitches are closely spaced and form a smooth surface.

Stitch width may be varied in a similar manner. Move stitch width pointer to any desired setting: the higher the number, the wider the stitch.

### Adjusting Tension for Satin Stitching

Satin stitching generally requires even less tension than open zig-zag stitching. Furthermore, the wider the satin stitch, the lighter the tension on the thread must be. Thus, a stitch width setting of 5 requires the least tension; narrower stitching requires somewhat more.

Notice the stitching on your sample. If the stitching looks too taut, or if the fabric is puckering, lower the needle thread tension by turning the tension dial to a lower number.





## APPLIQUÉ

### Preparation

Make a test sample to decide which of the following methods is the most appropriate for your fabric and design. Mark design on piece of fabric to be appliquéd. Cut out design leaving about 3/4-inch (2cm) margin all around. Position the design. Baste it to the fabric.

#### Method 1

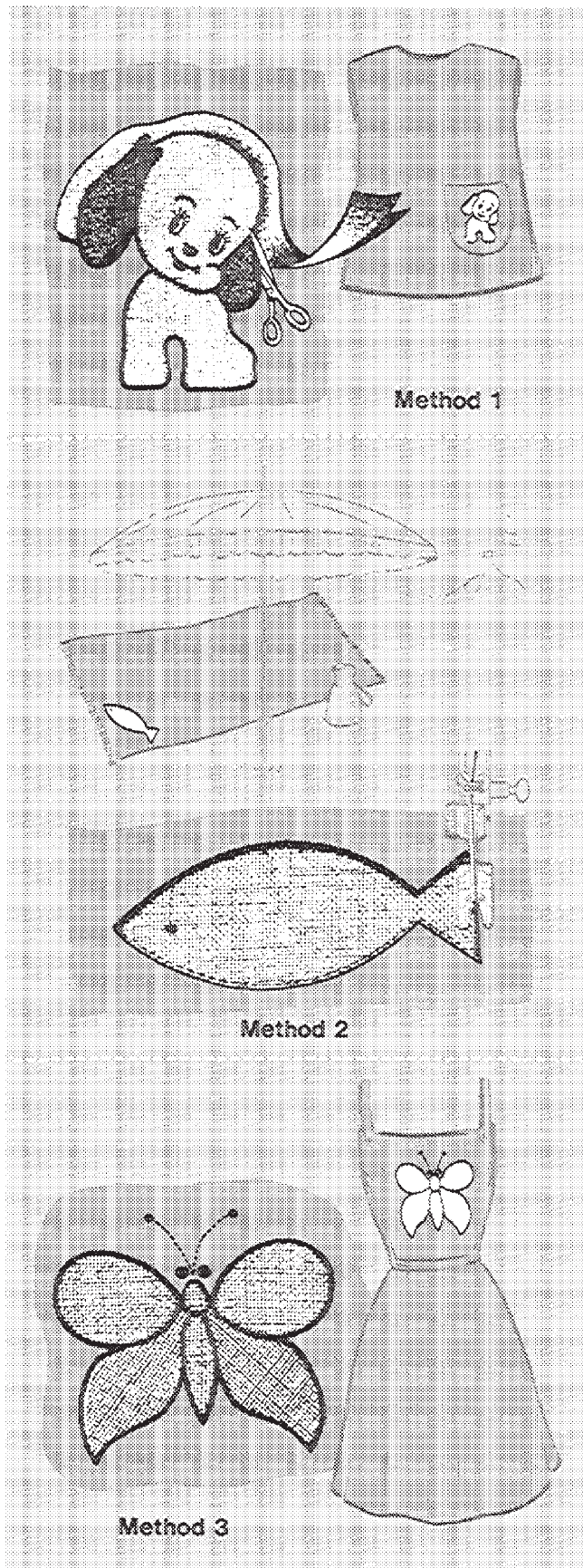
- Set pattern selector and stitch-width dial for desired applique stitch. Adjust stitch length to a fine setting, between 1 and 0.
- Follow the outer edge of the design with a decorative stitch.
- Trim away the excess fabric on the outer edges of the stitching.

#### Method 2

- Select straight stitching.
- Outline the entire design with a short stitch.
- Trim raw edges to the stitching and remove basting.
- Select stitch pattern and stitch width desired, and set stitch length on a satin stitch setting for a closely spaced stitch, between 1 and 0.
- Stitch, following the straight stitch outline. This method will produce a smooth over-edged finish, with no raw edges to be trimmed after stitching.

#### Method 3

- Purchased motifs can be appliquéd quickly and easily by using either a straight or decorative stitch.



## FREE-MOTION STITCHING

In free-motion stitching, you sew without a presser foot and control fabric movement by means of an embroidery hoop. Either a straight or a plain zig-zag stitch can be used. Because you can move the hoop in any direction — forward or backward, from side to side, or even diagonally — free-motion stitching is extremely useful for embroidery designs. On the other hand, it is equally useful for darning.

If you are **embroidering**, you can vary the length of stitches simply by moving the hoop faster or slower under the needle. The faster you move the hoop, the longer the stitches will be. You can also vary the width of zig-zag stitches from wide to narrow by controlling the angle at which the hoop is placed and moved under the needle.

For **darning**, the embroidery hoop used in free-motion stitching enables you to hold the fabric taut—a real advantage when your fabric is lightweight or soft and thus likely to pucker. See page 32 for directions.

## FLOWER EMBROIDERY

- Pattern: zig-zag
- Stitch width: to suit fabric
- Feed cover needle plate
- No presser foot

### Preparation

Trace design on right side of fabric. Prepare the area to be embroidered using an underlay if the fabric is soft. Place the work in an embroidery hoop approximately 7 inches (18cm) in diameter. If the design to be embroidered covers a large area, it will be necessary to reposition the work in the hoop as each section is completed.

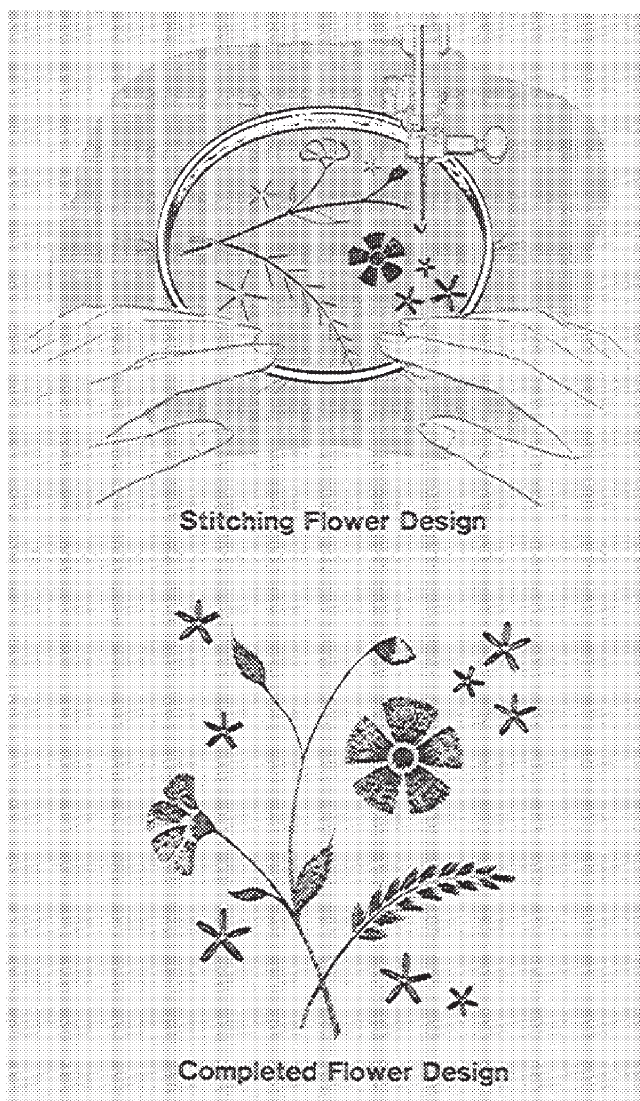
The darning and embroidery foot may be used to assist fabric control.

### Procedure

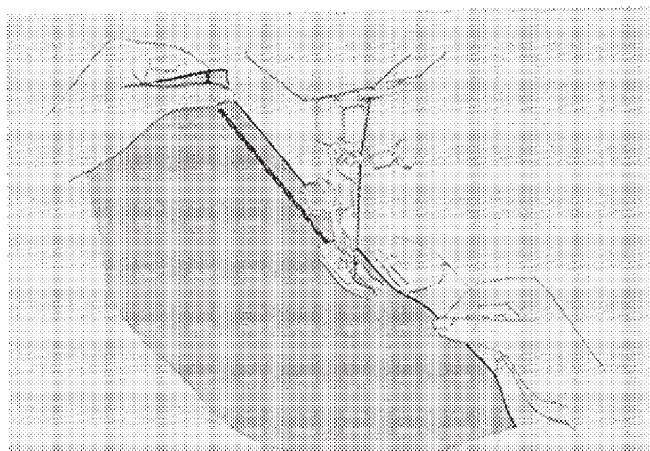
1. Position work under needle and *lower presser bar to engage tension.*

2. Hold needle thread loosely and turn hand wheel *toward you* to bring bobbin thread up through fabric. Hold both thread ends and lower needle into fabric.
3. Stitch, outlining or filling in design with zig-zag stitches. For a smooth, satiny surface, place parallel stitches close together, moving hoop slowly and steadily. For an irregular texture, move the hoop more rapidly, allowing some stitches to overlap.

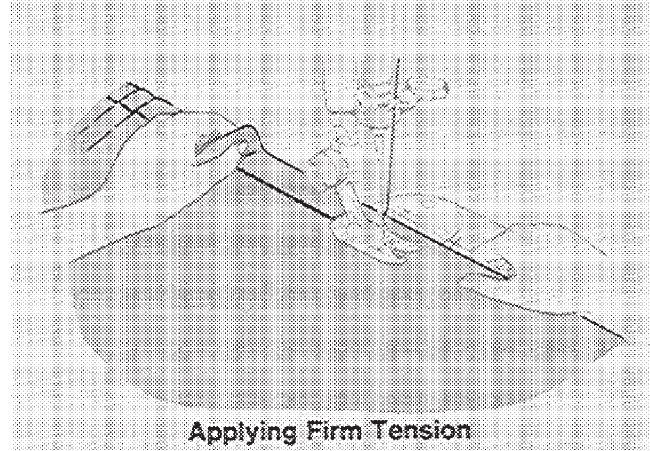
A series of bar-tacks can be used to form spray-like leaves or flowers. This technique adds variety and lightness to many designs. Leaves and petals formed in this way may carry the thread from one bar tack to the next. This carrying thread eliminates tying of the thread ends.



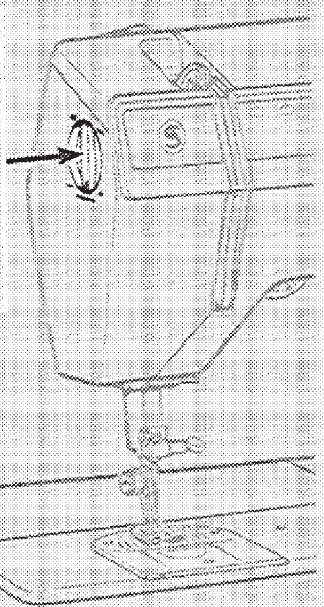
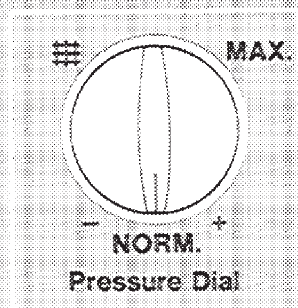
## 6. MACHINE STITCH PATTERNS



Applying Gentle Tension



Applying Firm Tension



### *adjusting stitches for stretch fabrics*

#### GUIDING AND SUPPORTING FABRIC

Most fabrics of stretch or knit construction need only to be guided in front of the presser foot when you use one of the stretch stitches. Some fabrics—nylon tricot and elasticized fabrics, for example—do require support while being stitched.

- For nylon tricot and similar synthetic knits, apply *gentle* tension by holding the seam in front and back of the presser foot as you sew.
- For elasticized fabric, stretch lace, and knits with an unusual amount of elasticity, apply *firm* tension in front and back of the presser foot to stretch the seam as the stitches are being placed.

**CAUTION:** Do not pull the fabric while you are stitching as this may deflect the needle, causing it to break.

#### ADJUSTING PRESSURE WHEN SEWING KNIT AND STRETCH FABRIC

Some knit and stretch fabrics, because of their structure, require either more or less than normal (**NORM**) presser-bar pressure to feed smoothly and evenly.

- For thick, soft or very stretchy knits, decrease pressure by turning dial from **NORM** (normal) toward **DARN**.
- For nylon tricot, ciré and similar hard surface synthetic knits, increase pressure by turning dial from **NORM** (normal) toward **MAX** (maximum).

## handling special fabrics

Many fabrics, because of their construction or finish, demand special attention in sewing. Techniques used in stitching and handling, and choice of machine accessories, will vary with the fabric. Let the table below guide your selection.

**FABRIC-HANDLING TABLE**

| FABRIC  | SPECIAL HANDLING  | STITCH<br>Length-Type   | NEEDLE<br>Style-Size  | MACHINE<br>ACCESSORIES  |
|---|---|---|---|---|
| <b>VINYL</b> —<br>leather-look<br>patent, suede<br>reptile          | Use transparent tape as a substitute for pins or basting — Topstitch to hold seams and edges flat — Avoid worked (machine) buttonholes. Use bound buttonholes.  | Long Straight<br>Stitch   | Style 2020<br>Size 14 or 16<br>for woven<br>backing<br>Style 2045<br>Size 14 or 16<br>for knit<br>backing | General Purpose<br>Foot†<br>General Purpose<br>Plate  |
| <b>PILE</b> —<br>velvet,<br>velveteen,<br>corduroy                  | Stitch in direction of nap — Use plain seams — Zig-Zag or bind seam edges to prevent fraying — Press over a self-fabric cloth.  | Medium Straight<br>Stitch for seams<br>Medium Zig-Zag<br>or Honeycomb<br>Stitch for<br>overcasting        | Style 2020<br>Size 14<br>Style 2045<br>Size 14 or 16<br>for panne<br>velvet                               | General Purpose<br>Foot†<br>(General Purpose<br>Foot only for<br>overcasting)<br>General Purpose<br>Plate                           |
| <b>DEEP PILE</b> —<br>fake fur                                      | Pin rather than baste seams — Stitch in direction of nap — Use plain seams for short-hair furs; narrow overedged seams for shaggy, bulky furs — Shear pile from seam allowances to reduce bulk.       | Long Straight<br>Stitch for plain<br>seams<br>Medium to Short<br>Zig-Zag Stitch<br>for overedged<br>seams | Style 2020<br>Size 16   | General Purpose<br>Foot†<br>General Purpose<br>Plate  |
| <b>PERMANENT<br/>PRESS</b> —<br>percale,<br>broadcloth,<br>shirting | Control seam tension as it passes under the presser foot. Sew at moderate speed.  | Medium Straight<br>Stitch   | Style 2020<br>Size 11 or 14   | Straight-Stitch<br>Foot and Plate   |
| <b>FINE<br/>KNITS</b> —<br>tricot, jersey                           | Use narrow overedged, double stitched, or French seams — Hold thread ends securely for a few stitches at start of seam — Support seams while stitching. See page 46 — Increase presser-foot pressure. | Medium Straight<br>Stitch<br>Medium to Short<br>Narrow Zig-Zag<br>or Narrow<br>Overedge                   | Style 2045<br>Size 11 or 14   | Straight-Stitch<br>Foot and Plate<br>(for straight<br>stitching)<br>General Purpose<br>Foot and Plate<br>(for zig-zag<br>stitching) |
| <b>BLANKET<br/>BINDING</b> —<br>satin face                          | Hand-baste binding to blanket (pin marks show) — Miter corners.   | Long Straight<br>Stitch<br>Medium to Long<br>Zig-Zag Stitch<br>or Decorative<br>Stitch                    | Style 2020<br>Size 11 or 14   | General Purpose<br>Foot†<br>General Purpose<br>Plate  |
| <b>SOFT<br/>SHEER</b> —<br>chiffon, voile,<br>China silk            | Use French seams, double stitched — Hold ends of needle and bobbin thread when you begin to stitch — Support fabric while stitching.  | Medium to Short<br>Straight Stitch  | Style 2020<br>Size 9 or 11  | Straight-Stitch<br>Foot and Plate   |
| <b>NAPPED<br/>FABRIC</b> —<br>cashmere,<br>mohair, camel<br>hair    | Cut with nap running down — Sew in direction of nap — Topstitch to hold seams and edges flat.   | Medium to Long<br>Straight Stitch   | Style 2020<br>Size 11 or 14   | General Purpose<br>Foot†<br>General Purpose<br>Plate  |

† For best results when sewing this fabric, we recommend use of the Even Feed Foot, available at your Singer Sewing Center.

## stitch centering

- Stitch: stitch desired
- Width: to suit fabric and desired effect
- Length: to suit fabric and desired effect
- General purpose needle plate
- Special purpose foot
- Speed range: **SLOW**

When sewing, it is important to correctly guide the stitches on your fabric to achieve centered stitching. A line of stitching is centered when it lies evenly on an imaginary line on the fabric. To clearly see what stitch centering is, and to practice even stitch guidance and machine control, try the test below.

Use a light color top and under thread for this test. This will demonstrate to you how a correctly centered line of stitching lies on a given line.

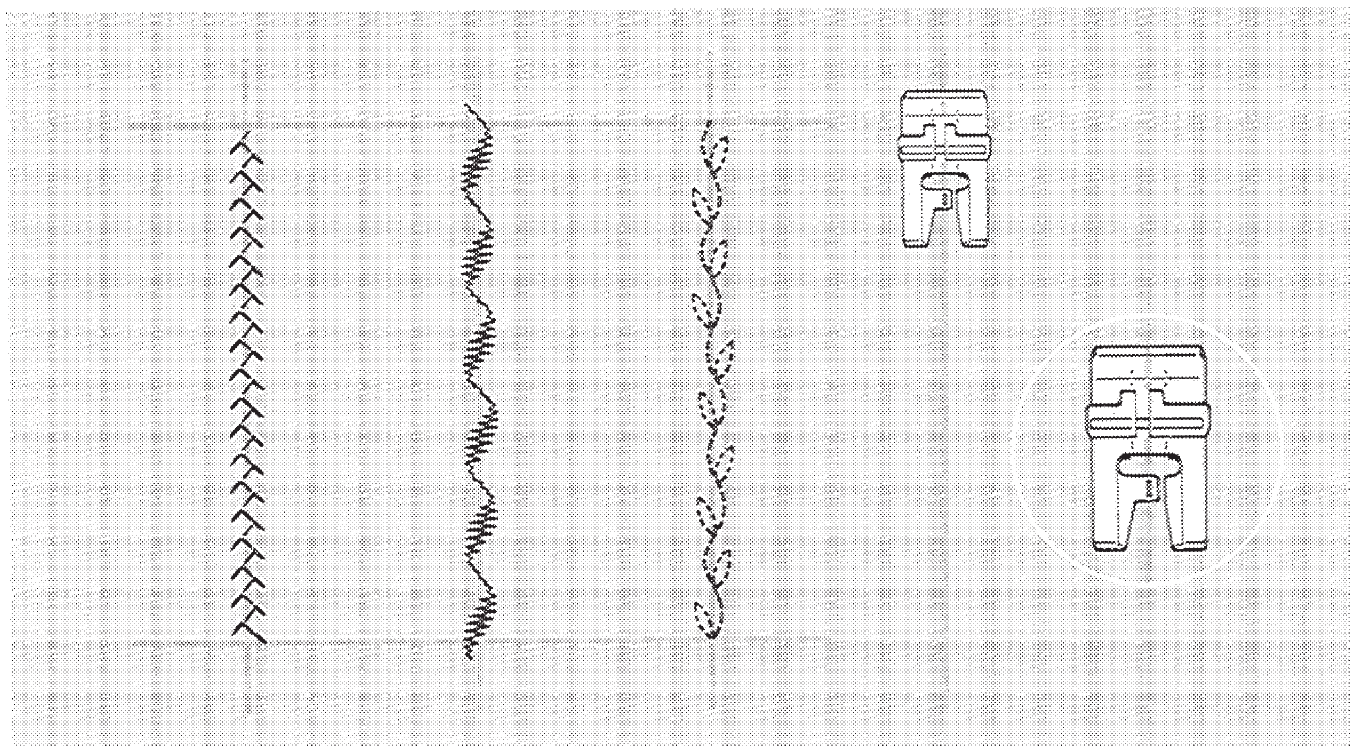
- Set machine on straight stitch.
- Attach special purpose foot.  
(Notice that foot is clear plastic for better visibility and has vertical black line in the center to guide stitch placement on fabric.)

- Draw a vertical line on a sheet of paper or use graph paper, if available.
- Place paper under presser foot with drawn line centered under black vertical guideline of special purpose foot.
- Lower presser foot.
- Lower needle by turning hand wheel *toward you*, and position it on drawn line of paper.
- Carefully sew along the drawn line on the paper, using black vertical guideline of foot to guide stitching.  
(Do not watch needle.)
- After you have sewn along the drawn line, carefully remove paper from under presser foot.

If you have correctly guided the paper while sewing, the stitched line will be centered. Notice that the stitching lies evenly on the drawn line.

Try a paper sampler using a variety of stitches to practice stitch centering.

To assure centered stitching on the fabrics you sew, use a guideline marked with tailor chalk.



## stitch usage: functional and decorative

Many stitches on your new machine have both functional and decorative applications. The following pages include examples to illustrate the versatility of these stitches. Though many stitches can perform in a given

application, to avoid repetition only one stitch has been used in each example. We, therefore, hope that the examples provided will help you to use your own creative talents.


### FEATHERSTITCH



The featherstitch is an extremely versatile stitch. Use it for stretchable straight-stitch seams in knit and stretch fabric and for fagoting, embroidering and quilting.

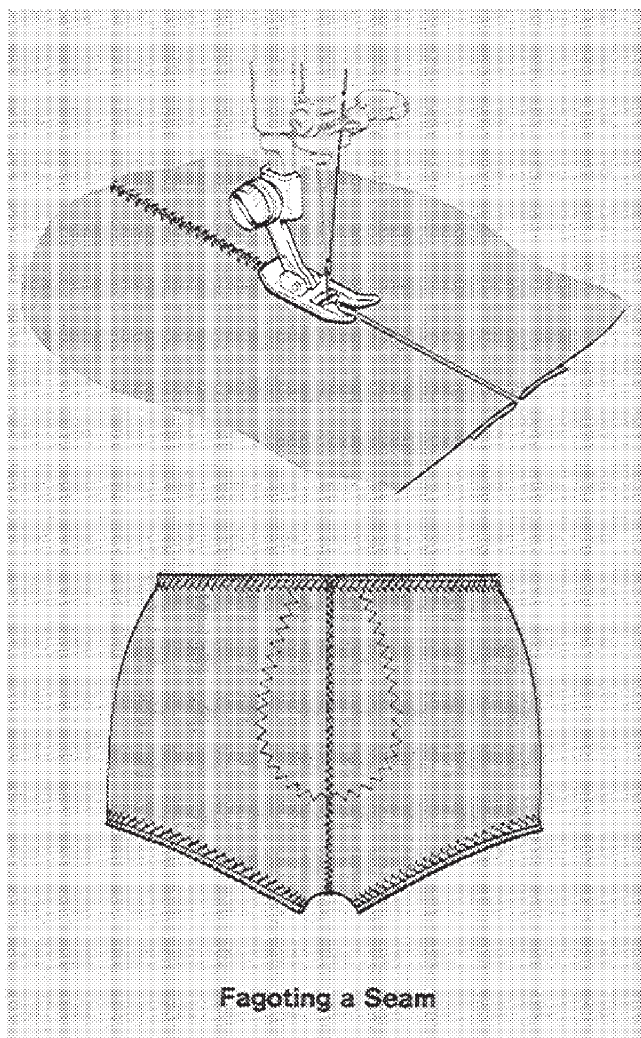
There are numerous applications for the featherstitch. Examples have been provided which we hope will help to trigger your imagination.

### Fagoting

- Stitch: featherstitch 
- Stitch width: to suit fabric and design
- Stitch length: to suit fabric and design
- General purpose needle plate
- General purpose foot
- Speed range: **SLOW**

The art of joining two pieces of fabric with an open, lacy decorative stitch is called fagoting. You can create this attractive trimming with the feather stitch. Use it for decorative stretch seams in bathing suits or for joining together narrow strips of fabric to make an entire garment section.

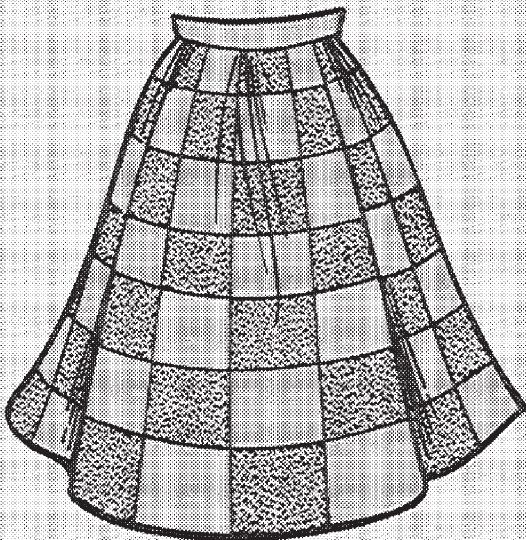
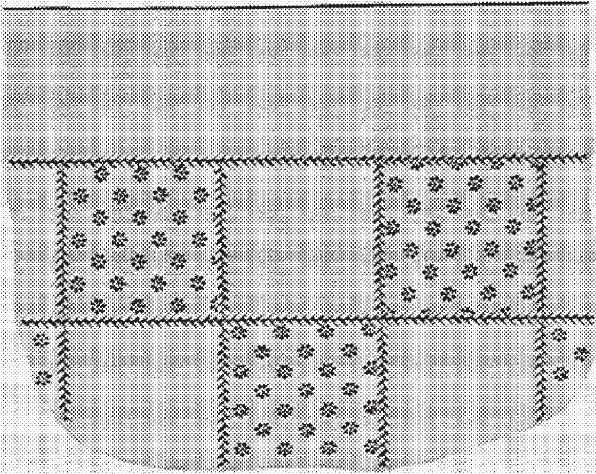
- Turn under (and hem by slipstitching) the raw edges of the fabric strips or seams to be joined. Press flat.
- Stitch, guiding the two fabric edges under the center of the presser foot a scant 1/8-inch (3mm) apart (abut edges for bathing suit seams). Allow the needle to alternately make a stitch in each fabric strip and two stitches in the center of the opening.




Fagoting a Seam



## Patchwork Quilting



## Patchwork Quilting

- Stitch: featherstitch 
- Stitch width: to suit fabric and design
- Stitch length: to suit fabric and design
- General purpose needle plate
- General purpose foot
- Speed range: **SLOW**

Patchwork for quilts and wearing apparel, formerly put together with hand stitching, can be quickly "pieced" and decorated at the same time by using the feather stitch. Joinings are both flexible and durable when this method is used.

### Procedure:

1. Cut a fabric underlay to size. Baste a light layer of padding to underlay if a quilted effect is desired.
2. Prepare patches, turning under 1/4-inch (6mm) seam allowance.
3. Baste patches to underlay in arrangement desired, butting all edges.
4. Stitch in lengthwise and crosswise rows, allowing stitches to straddle patches.

## PARIS POINT STITCH



The Paris Point stitch is a traditional pattern used for hemstitching, drawn-thread work, picot-like edges and appliqué. A touch of quiet elegance is added to table and bed linens when hems are finished with the Paris Point stitch. It is most effective when used on firm, plain weave

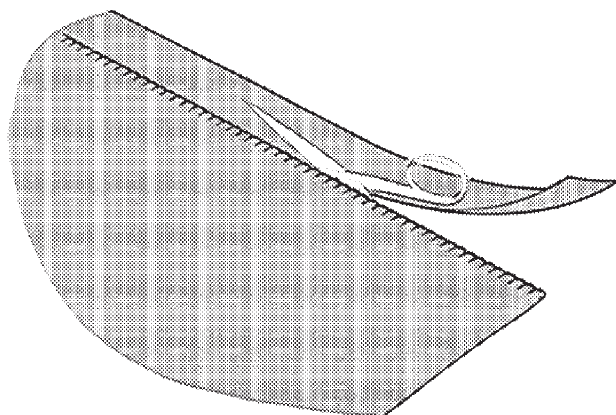
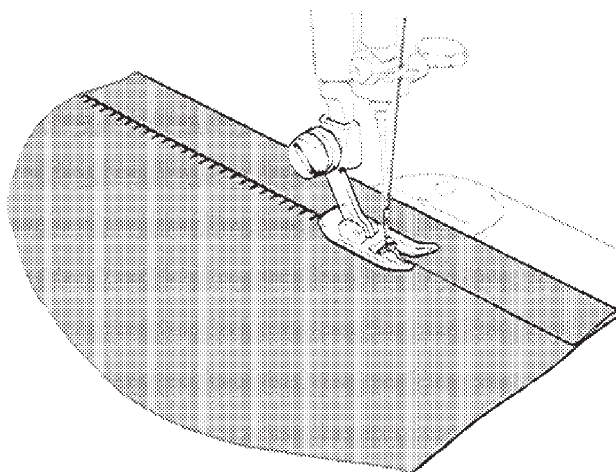
fabrics such as lawn or organdy, on fabrics from which threads can be drawn readily such as linen. There are many applications for the Paris Point stitch. Examples have been provided which we hope will help to stimulate your imagination.

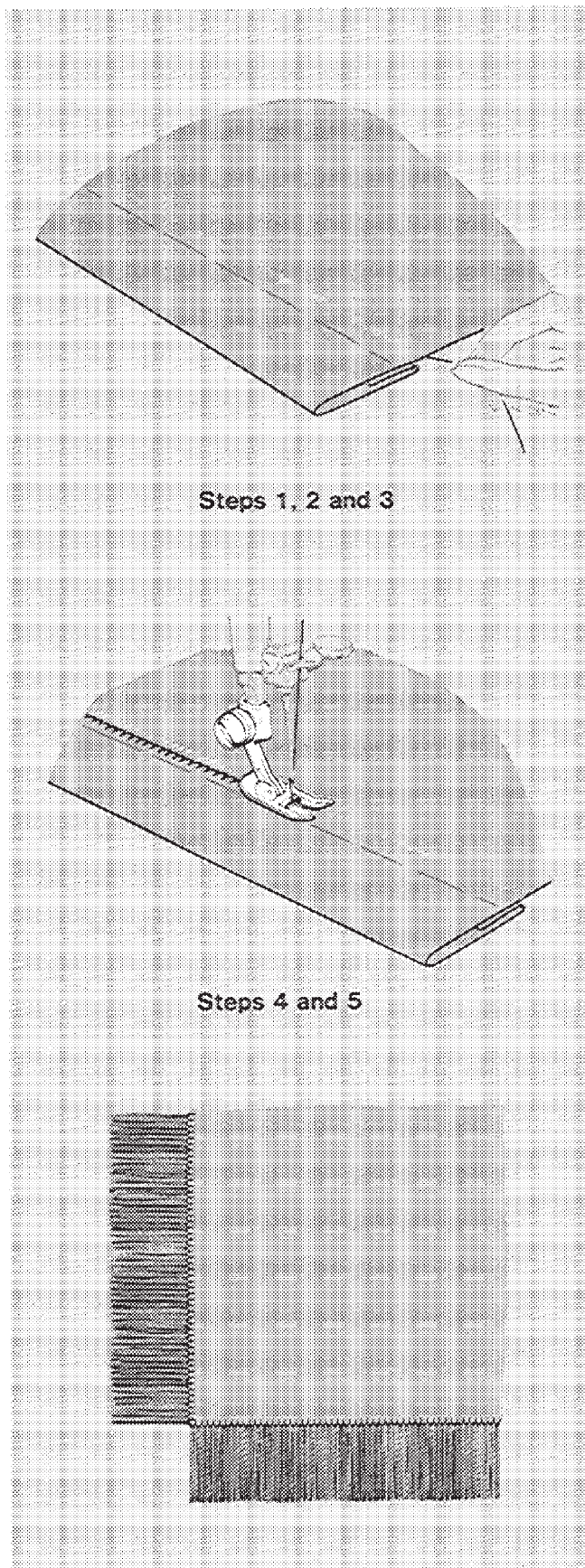
### Picot Edges

- Stitch: Paris Point stitch
- Stitch width: to suit fabric and effect
- Stitch length: to suit fabric and effect
- General purpose needle plate
- General purpose foot
- Speed range: **SLOW**

A dainty and decorative picot-like edge can be very simply made in fine, sheer fabrics when you use the Paris Point stitch. The fine hemstitched finish produced by this stitch is particularly appropriate for edging ruffles because it eliminates bulk. Use it too, as a foundation stitch for hand rolled hems, it will make bias cut edges firm and easy to handle. Soft fabrics such as chiffon and voile, can be given a picot edge if they are supported by a crisp fabric underlay while being stitched. Always make a test sample to determine the need for an underlay and the correctness of stitch width, stitch length, and thread tension.

- Use a large needle (size 18 is recommended) and a fine mercerized cotton thread.
- Mark stitching line approximately 1/2-inch (1.2cm) in from raw edge of fabric.
- Stitch along marked line, placing fabric so that the edge to be finished is turned to the right.
- Trim fabric close to the right side of line of stitching as shown.





Steps 1, 2 and 3

Steps 4 and 5

## Paris Point Hemstitching

- Stitch: Paris Point stitch
- Stitch width: to suit fabric and effect
- Stitch length: to suit fabric and effect
- General purpose needle plate
- General purpose foot or
- Special purpose foot
- Speed range: **SLOW**

Paris Point hemstitching is most effective when used on firm, plain weave fabrics such as lawn or organdy, or fabrics from which threads can be drawn readily, such as linen.

1. Insert a size 18 needle and thread the machine with a fine mercerized cotton, silk, or synthetic sewing thread.
2. Turn edge of fabric over twice to make hem of desired width. Fold and press on length-wise or crosswise thread of fabric. Baste in place.
3. Draw out 2 to 4 threads just above top edge of hem. The number of threads drawn will depend on the texture of the fabric and the depth of the open work desired.
4. Place work, right side up, under presser foot *with the hem toward the left*.
5. Lower the presser foot and stitch, guiding the hem edge under the needle so that the straight stitches are made in the drawn thread channel (or through the single thickness of fabric) and the sideward stitches (or points) *in the hem*.

## Fringed Edges

- Cut fabric carefully to correct size.
- Draw a thread for depth of fringe along each edge.
- Place fabric so that the edge to be fringed is turned to the right.
- Stitch with matching or contrasting thread along marked lines, pivoting on the needle at corners.
- Fray fabric threads between stitching and fabric edges to form fringe.

## OVEREDGE STRETCH STITCH



Although the overedge stretch stitch may be used creatively, it is primarily applied in finishing seams, hems, and facing edges. Use it to overedge seams that require stretch such as crotch seams.

It is particularly helpful in ski-suit, snow suit and swim suit construction. Examples of how to use the overedge stretch stitch follow.

### Overedged Seams

- Stitch: overedge stretch stitch
- Stitch width: 5†
- Stitch length: to suit fabric and effect
- General purpose needle plate
- Overedge foot
- Speed range: **SLOW**

#### Method 1

Make a test sample to determine the suitability of an overedge seam finish for your garment. Duplicate the grain of your garment seam. Adjust thread tension to suit fabric. Use an appropriate *Yellow Band\** needle in the machine for a synthetic knit. (See Fabric, Thread, and Needle table on page 12.)

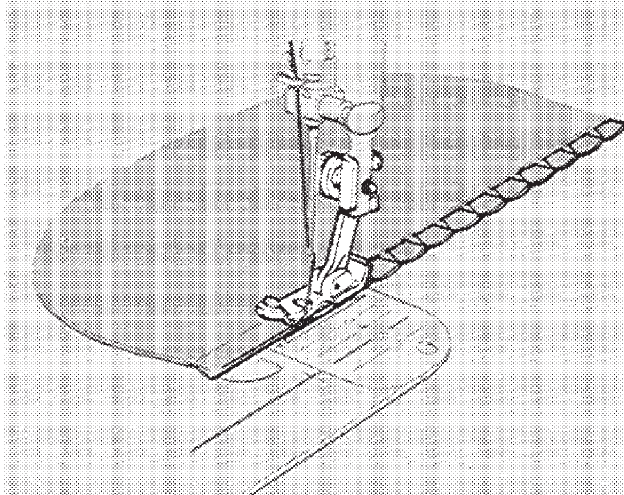
Baste the garment together on the seam line allowing for 5/8-inch (1.5cm) seam allowance and fit in the usual way.

After making any necessary adjustments, trim seam edge evenly to a scant 1/4-inch (5mm) from seam-line basting.

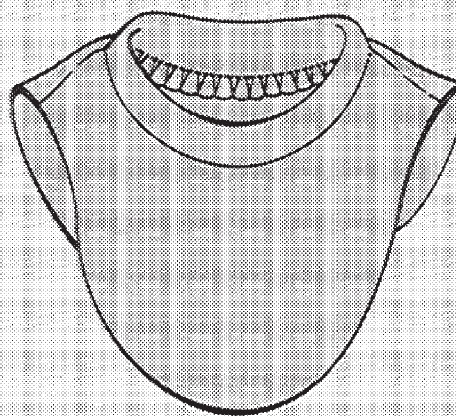
Place trimmed seam under the foot so that the straight stitches fall on the basted seam line and zig-zag stitches fall over the seam edge.

†If a narrower stitch width is desired, as for seam finishing of fine fabrics, use the general purpose foot in place of the overedge foot.

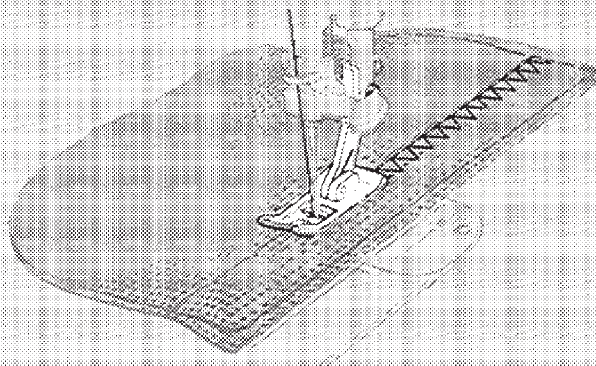
#### Method 1



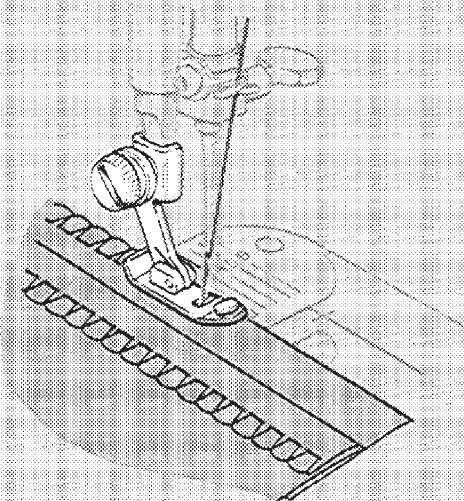
Stitching Seam



Method 2



Mock Overedging



Overedged Seam Finish

## Mock Overedge

This finish is appropriate for bulky knits, fine tricot and fabrics that curl or fray.

### Method 2


Make a test sample.

Baste the garment together on the seam line and fit in the usual way.

After making any necessary adjustments, suggested in Method 1, place seam under foot. Stitch so that the stitches on the left side of the pattern penetrate the basted seam line.

Press after stitching and trim away excess fabric to produce a narrow seam edge. When the seam supports the garment, omit the trimming step and press seam open in the usual way.

## Overedged Seam Finish

- Stitch: overedge stretch stitch 
- Stitch width: 5 only†
- Stitch length: to suit fabric and effect
- General purpose needle plate
- Overedge foot
- Speed range: SLOW

Adjust stitch length to suit your fabric.

Trim seam edges evenly.

Place stitching over the trimmed edge of the seam allowance as illustrated.

†If a narrower stitch width is desired, as for overedging fine fabrics, use the general purpose foot in place of the overedge foot.

## BLINDSTITCH



The blindstitch has many practical and functional uses. Its most common use provides a durable hem finish. However the creative ways one might apply this

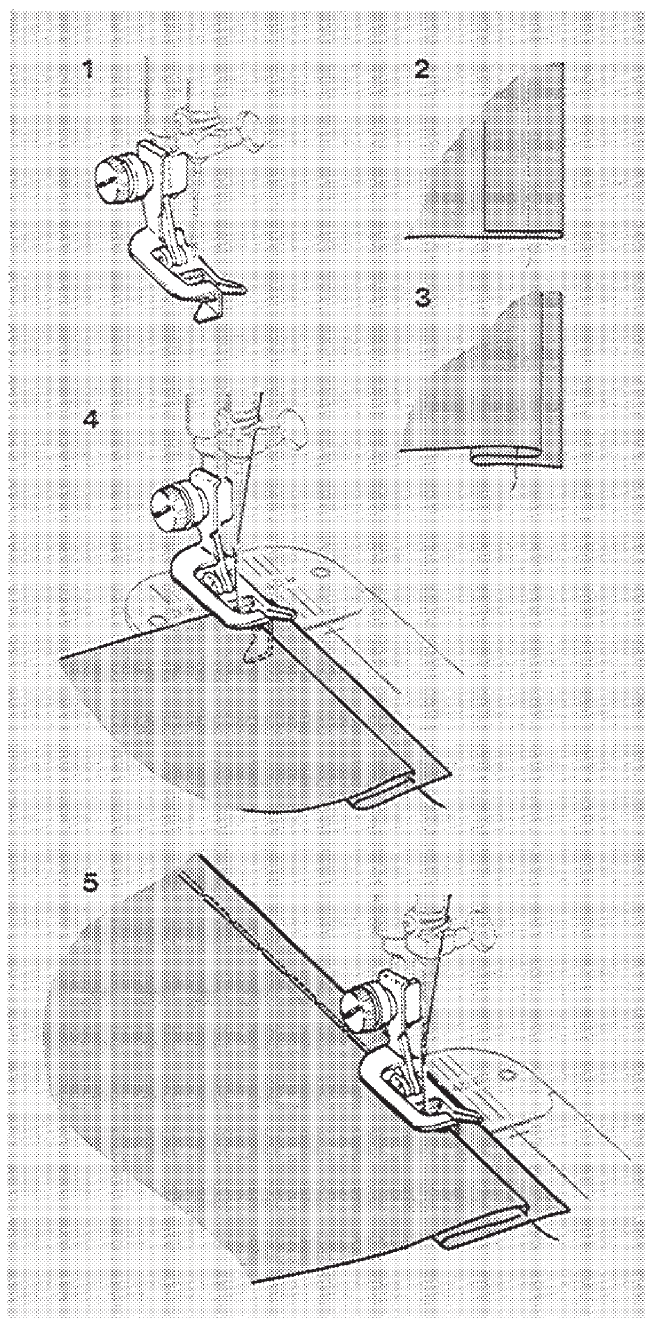
stitch are unending. Examples have been provided which we hope will help to trigger your imagination.

### Blindstitch Hems

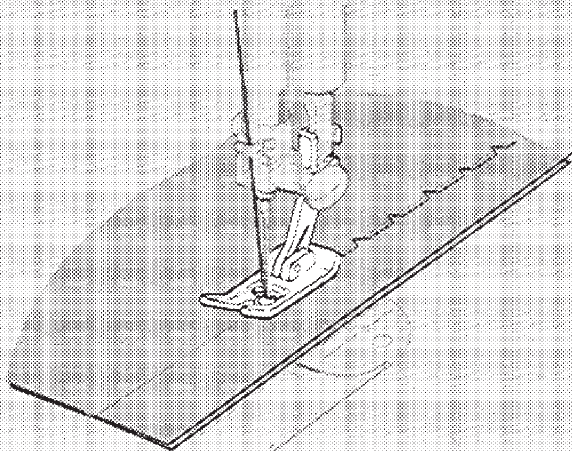
Blindstitching provides a durable hem finish that is almost invisible. It is best suited to straight or slightly curved seams. Taped, bound, or turned hem edges can also be blindstitched with equal ease.

- Stitch: blindstitch
- Stitch width: to suit fabric
- Stitch length: to suit fabric
- General purpose needle plate
- General purpose foot

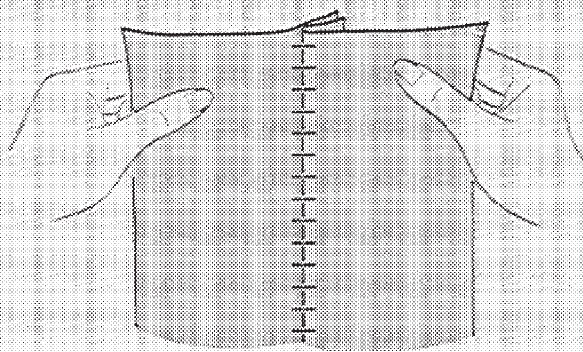
1. Raise foot, loosen screw, and slip blind stitch hem guide between the screw and the shank of the foot. Make sure the underside of the guide clears the slide plate and the front of the foot. Tighten screw with coin.
2. Prepare hem in the usual way. It is advisable to baste the hem. Place the basting at least 1/2-inch (1.3cm) below the edge of the hem allowance to avoid catching the flange of the guide as you stitch.
3. With the wrong side of the work uppermost, turn the hem under, creating a soft fold from the top edge of the hem.
4. Position the hem under the foot with the soft fold resting against the wall of the guide. Make sure the flange of the guide is between the soft fold and top of hem, as shown.
5. Lower the foot, stitch so that the straight stitches fall on the hem allowance and the zig-zag stitches pierce the soft fold of the work. Adjust stitch width if necessary. While stitching, guide the hem edge in a straight line and feed the soft fold evenly against the wall of the guide.







**Blindstitching a Ladder Seam**



**Opening Seam to Form Ladder Effect**

## Ladder Seam

The blindstitch ladder seam is particularly appropriate for knit and stretch fabrics. It is ideal for stretchable construction seams, and edge finishes for necklines, pockets and collars in sportswear and swimsuits.

- 
- Stitch: blindstitch
  - Stitch width: to suit fabric
  - Stitch length: to suit fabric
  - General purpose needle plate
  - General purpose foot
- 

1. Make a test sample to adjust stitch width and length and needle-thread tension to suit the fabric. (Needle-thread tension should be lighter than normal.)
2. Cut and fit garment, allowing for 5/8-inch (1.5cm) seam allowance. Baste seam line.
3. Place fabric under presser foot so that the straight stitches fall on the seam line basting and the points toward the center of the garment.
4. After stitching, open seam by pulling fabric back on opposite sides of the seam to produce ladder effect. Press seam allowance after opening.

## SCALLOP STITCH



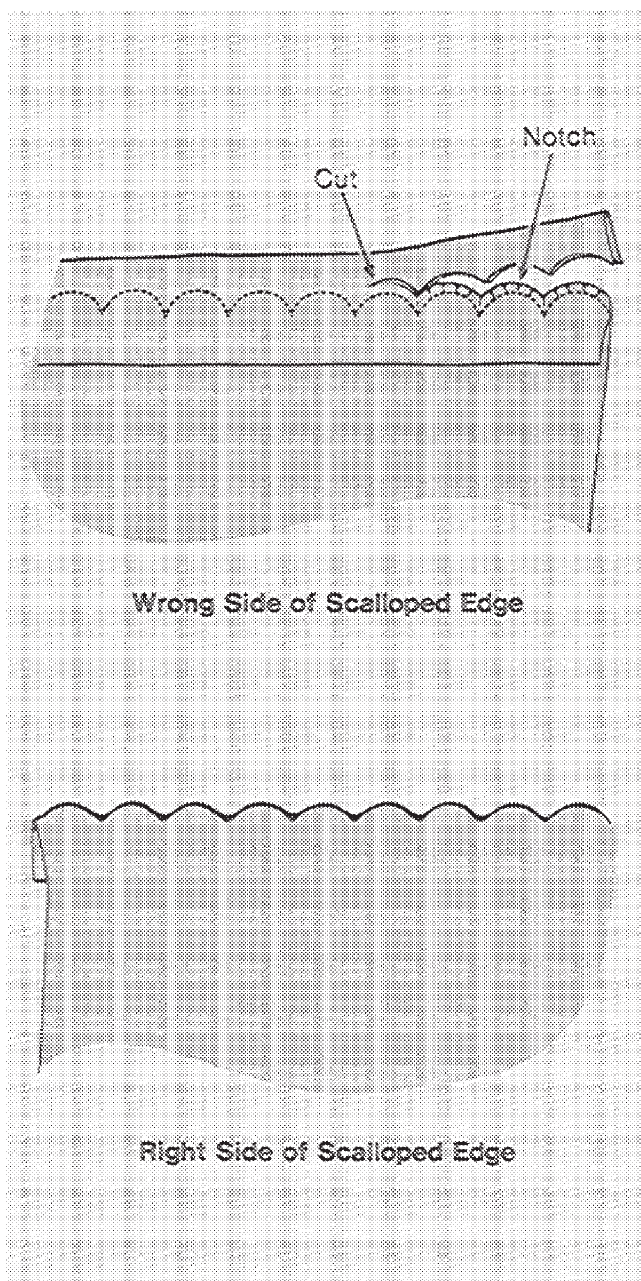
Scalloping adds interest to blouses, dresses, lingerie, and children's clothes. Scallops will be perfect in form and evenly spaced when you use the scallop stitch. Twin needle scallop stitching adds

a touch of femininity to garments. The decorative uses of this stitch are unending. Use your imagination to create new uses for this stitch.

### Scalloping

- Stitch: scallop
- Stitch width: to suit fabric and design
- Stitch length: to suit fabric and design
- General purpose needle plate
- General purpose foot

1. Place right sides of fabric together. (Shaped or bias edges should be interfaced.) Stitch scallops.
2. After stitching, trim seam allowance to 1/8-inch (3mm) or less.
3. Clip points down to flat stitch of scallops with scissors and, if necessary to make points lie flat, notch curves.
4. Turn to the right side and gently push scallops out. Press flat.

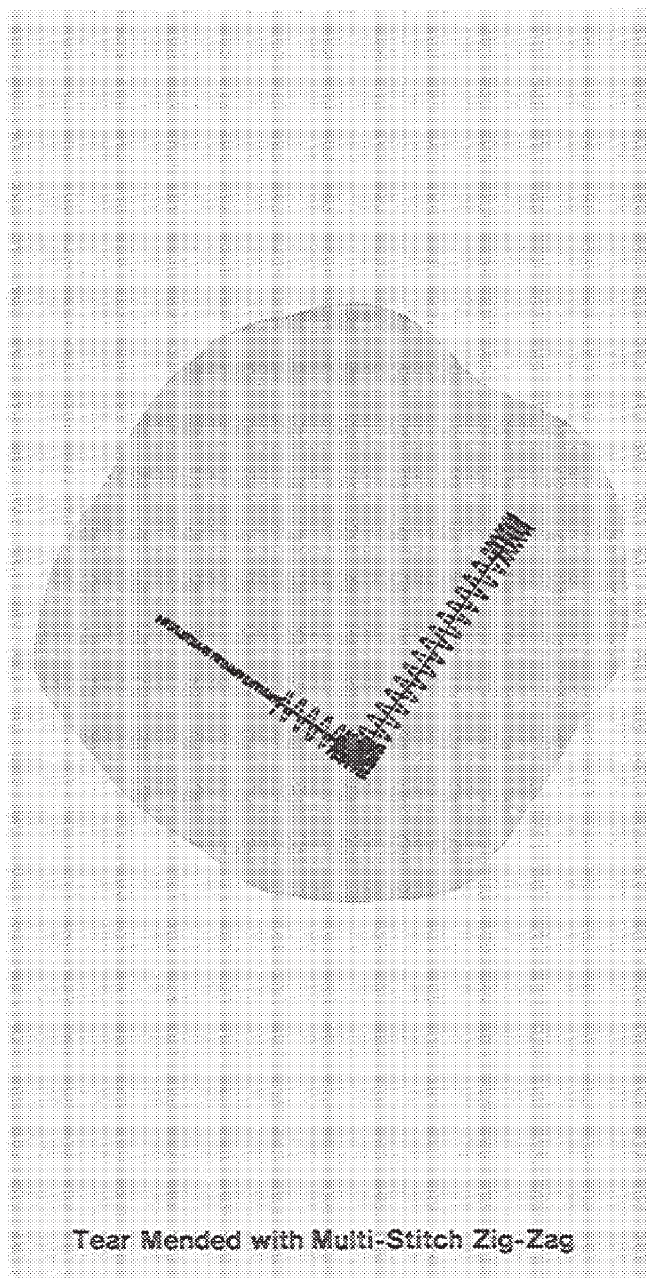


## MULTI-STITCH ZIG-ZAG



The multi-stitch zig-zag is an extremely versatile stitch. Use it to mend, join, or reinforce without bulk. With this stitch you may attach elastic and stretch lace, construct lingerie and swimsuits, as well

as to finish seams. There are many other useful applications for the multi-stitch zig-zag. Examples have been provided for your use.



Tear Mended with Multi-Stitch Zig-Zag


## Mending a Tear

- Stitch: multi-stitch zig-zag
- Stitch width: 2 to 5
- Stitch length: programmed
- General purpose needle plate
- General purpose foot

Many zig-zag stitch patterns are just as useful for mending as they are for creative sewing. The multi-stitch zig-zag forms a firm, flexible bond that is ideal for repairing tears.

1. Trim ragged edges.
2. Place underlay on the wrong side of tear for reinforcement. (Do not baste or pin the underlay, since you will be bringing the edges together in the next step.)
3. Stitch on the right side, bringing the edges of the tear together. Shorten stitch length at ends and corners to give extra strength.
4. Trim underlay.


## Replacing Lingerie Elastic

- Stitch: multi-stitch zig-zag 
- Stitch width: 2 to 5
- Stitch length: 1.5
- General purpose needle plate
- General purpose foot

1. Fit elastic for desired snugness at waistline, allowing one inch (2.5cm) for joining. Lap ends and stitch together as shown using a ball point needle.
2. Divide elastic band into four equal segments and mark with pins. Do the same to the garment. Then pin together at corresponding points, pinning elastic over right side of fabric, top edges even.
3. Select multi-stitch zig-zag. Plain zig-zag, elastic stretch stitch, honeycomb or featherstitch are also effective for replacing lingerie elastic.
4. Take a few stitches to anchor elastic to fabric. Then hold elastic and garment edge taut as you stitch so that it will remain stretchable after stitching is completed.

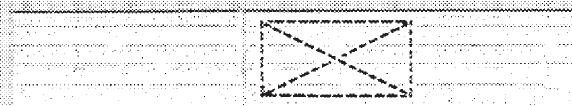
**Caution:** Do not pull the fabric while you are stitching as this may deflect the needle, causing it to break.

## FINISHES FOR HEMS AND FACINGS

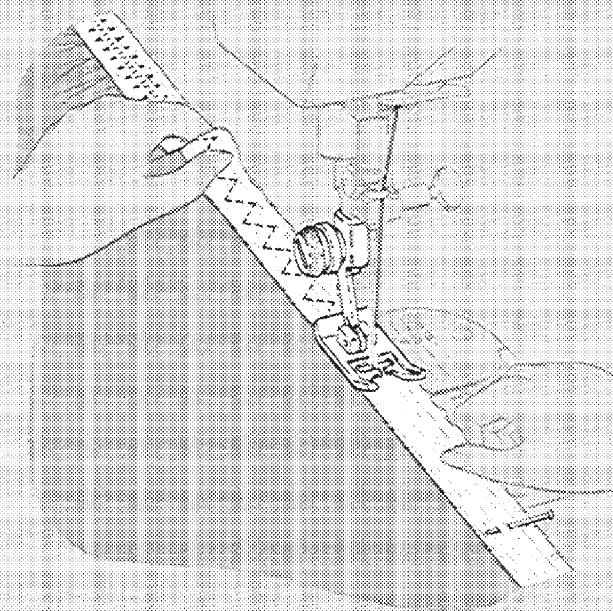
- Stitch: multi-stitch zig-zag 
- Stitch width: 5
- Stitch length: 1.5 to 3
- General purpose needle plate
- General purpose foot

Hem and facing edges in knit and stretch fabrics will be less apt to press through and mark when given a flat edge-finish. Edge finishing with the multi-stitch zig-zag eliminates the bulk of turned-in edges and retains fabric flexibility.

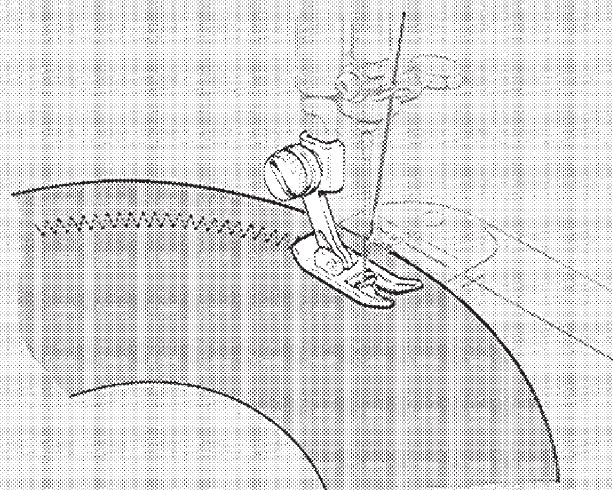
1. Make a test sample to check thread tension and stitch length if you are using the multi-stitch zig-zag.
2. Place stitching about 1/2-inch (1.3cm) from hem or facing edge.
3. Press after stitching and trim away excess fabric close to the stitching line.



Joining Elastic

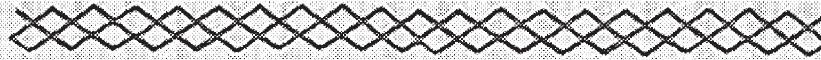


Replacing Lingerie Elastic



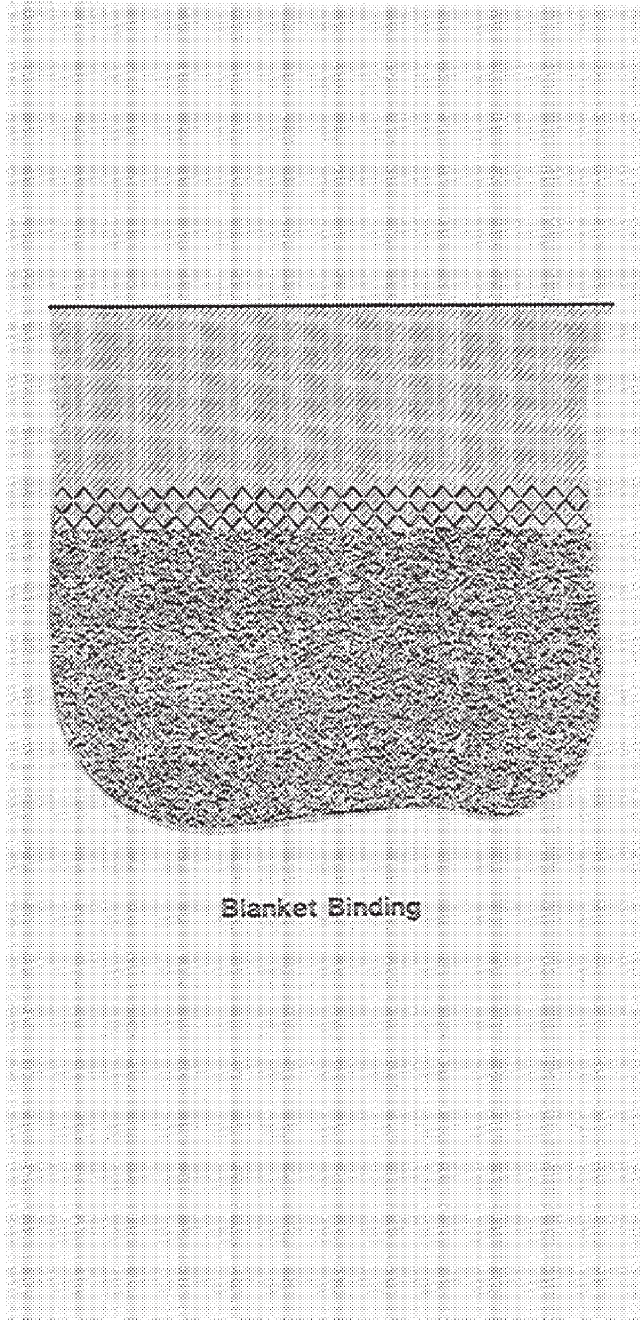
Applying Facing Finish

## HONEYCOMB STITCH



The honeycomb stitch is ideal for smocking and useful for mending, overcasting and attaching elastic, stretch lace and

blanket binding. Use this versatile stitch to create decorative designs on fabrics that stretch.



Blanket Binding

### Blanket Binding

- Stitch: honeycomb
- Stitch width: to suit fabric and effect
- Stitch length: to suit fabric and effect
- General purpose needle plate
- General purpose foot
- Speed range: **SLOW**

Often you can make a blanket look almost new by replacing the binding. The honeycomb stitch is particularly suitable because it combines utility with beauty.

1. Make a sample first to determine the correct stitch width and length setting. Reduce pressure (on pressure dial) and increase stitch length if necessary, so that blanket feeds freely. See page 22 for instructions on adjusting stitch length.
2. Remove worn binding and baste new binding securely in place.
3. Stitch, and remove basting.

The even feed foot which can be purchased at your Singer Sewing Center is most suitable for this application. It ensures smooth feeding and prevents fabric slippage.

## MAXI-STRETCH STITCH

The maxi-stretch stitch is an invaluable stitch most commonly used for sewing seams on fabrics with elasticity. Because it can be made in various lengths, the maxi-stretch stitch is particularly useful for seaming extra-heavy and extra-bulky

fabric and is easier to rip out than most stretch stitches. The maxi-stretch stitch is also effective for topstitching. Use your creativity with this stitch to ornament garments.

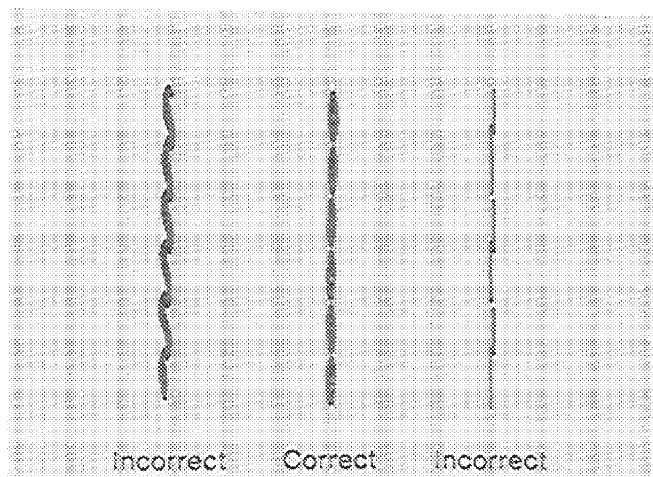
### Maxi-Stretch Stitch Seam

- Stitch: maxi-stretch stitch
- Stitch length: to suit fabric
- General purpose needle plate
- General purpose foot
- Speed range: **SLOW**

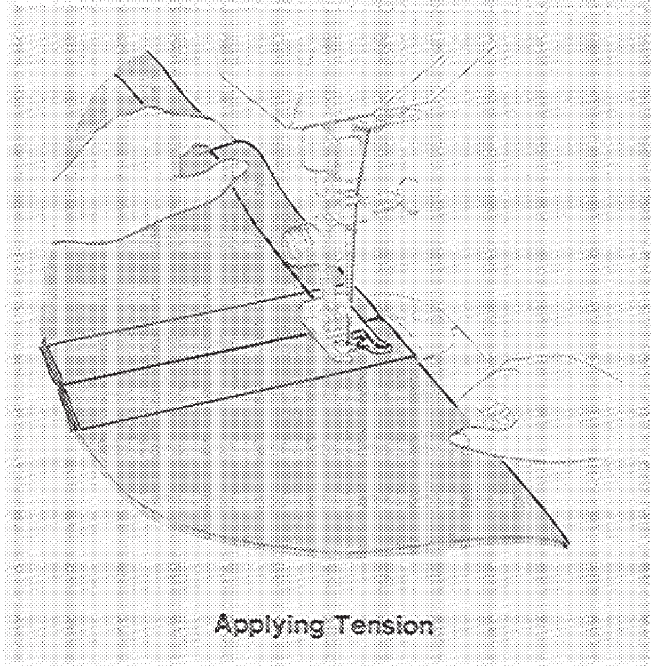
Make a test sample first to determine the best stitch length, pressure and tension settings for your fabric. To be sure that you are using the correct needle and thread combination for your fabric, see the Fabric, Thread, and Needle Table on page 12.

### Adjusting Stitch Length

Maxi-stretch stitch length is adjusted in the same way as regular straight stitch length. Longer stitches are most appropriate in firm woven and bonded fabrics, heavy double knits and sweater knits; shorter stitches are best for medium-weight knits and woven stretch fabric. For maximum strength, use the shortest stitch compatible with fabric weight.



Adjusting Reverse Stitch-Balance





### Adjusting Reverse Stitches

For maximum strength and good appearance, forward and reverse stitches that make up the maxi-stretch stitch should be balanced and of equal length. See page 24 on how to adjust reverse stitch balance control.

### Procedure

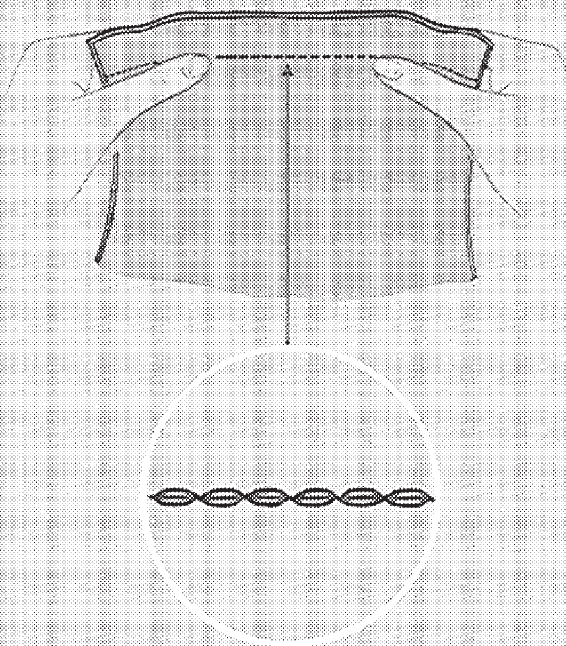
1. Pin or baste seam.
2. Draw needle and bobbin threads under foot to back of machine. Hold thread ends and by turning the hand wheel *toward you*, position needle in fabric a scant 1/4-inch (6mm) in from starting edge.

3. Lower presser foot and start machine, holding thread ends at back of foot as first few stitches are made.

4. Guide fabric lightly, letting the machine make the back-and-forth stitches that give stretch to the seam.

**CAUTION:** Do not pull fabric while you apply gentle or firm tension, as this may deflect needle, causing it to break.

When stitching across folds and seam joinings, apply tension by holding seam in front and back of the presser foot, as shown, to assist feeding. This type of support is essential for thick, soft fabrics.



**Straight Stretch Stitching**


## ELASTIC STRETCH (or "M") STITCH



The elastic stretch stitch or "M" stitch is an attractive stitch which may effectively be used in functional and decorative stitching. It is an indispensable stitch for

stretch garment repair and may be used for plain and overedged seams in knit and stretch fabrics. The "M" stitch lends itself to many creative uses.

### Stretch Garment Repair

- Stitch: "M" stitch 
- Stitch width: to suit fabric
- Stitch length: to suit fabric
- General purpose needle plate
- General purpose foot
- Speed range: **SLOW**

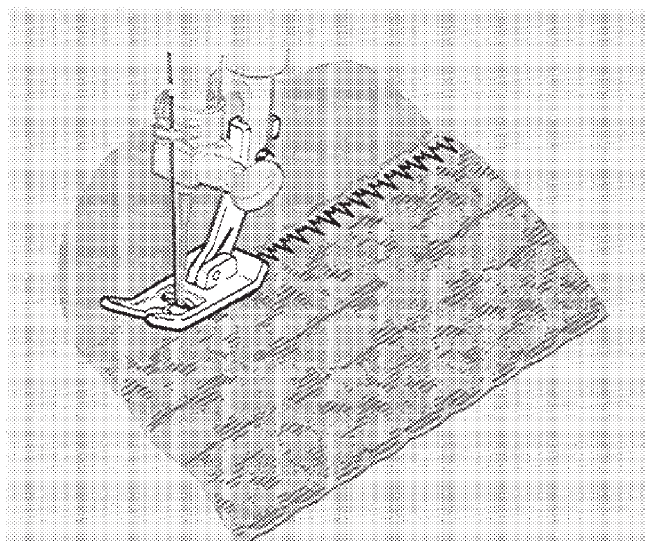
Seams in stretch garments retain their elasticity when stitched with the "M" stitch. This stitch pattern builds stretch into the seam as it is being sewn and is equally suitable when used to topstitch (as shown) or to overedge. Make a test sample to check stitch width and length settings.

### Lace Insertion

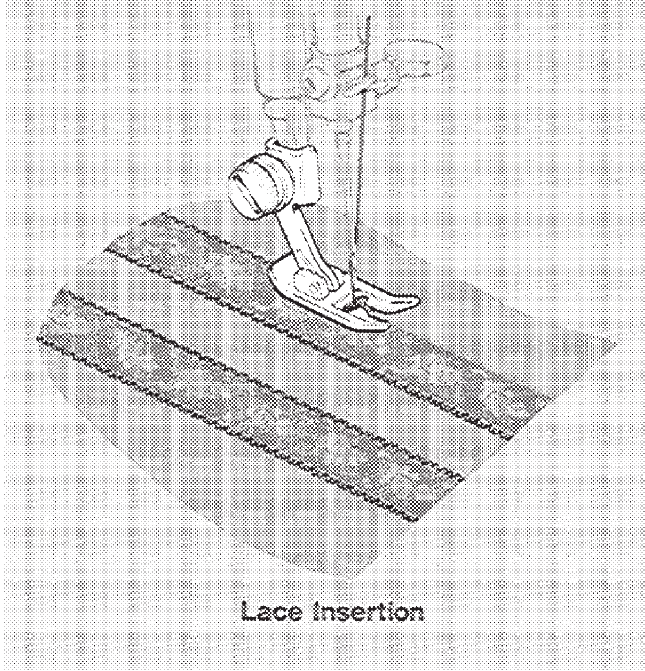
Fine lace insertion and edging add a feminine touch to blouses, dresses and children's wear. Such trimming can be made decorative and durable when applied with the "M" stitch.

#### Insertion

1. Mark position of lace and baste lace in position.
2. Stitch, guiding work under needle so that the top of the stitches fall along the edge of the lace as illustrated.
3. Trim fabric away under lace insertion after stitching both edges.



Repairing Stretch Garment  
with Elastic Stretch Topstitching

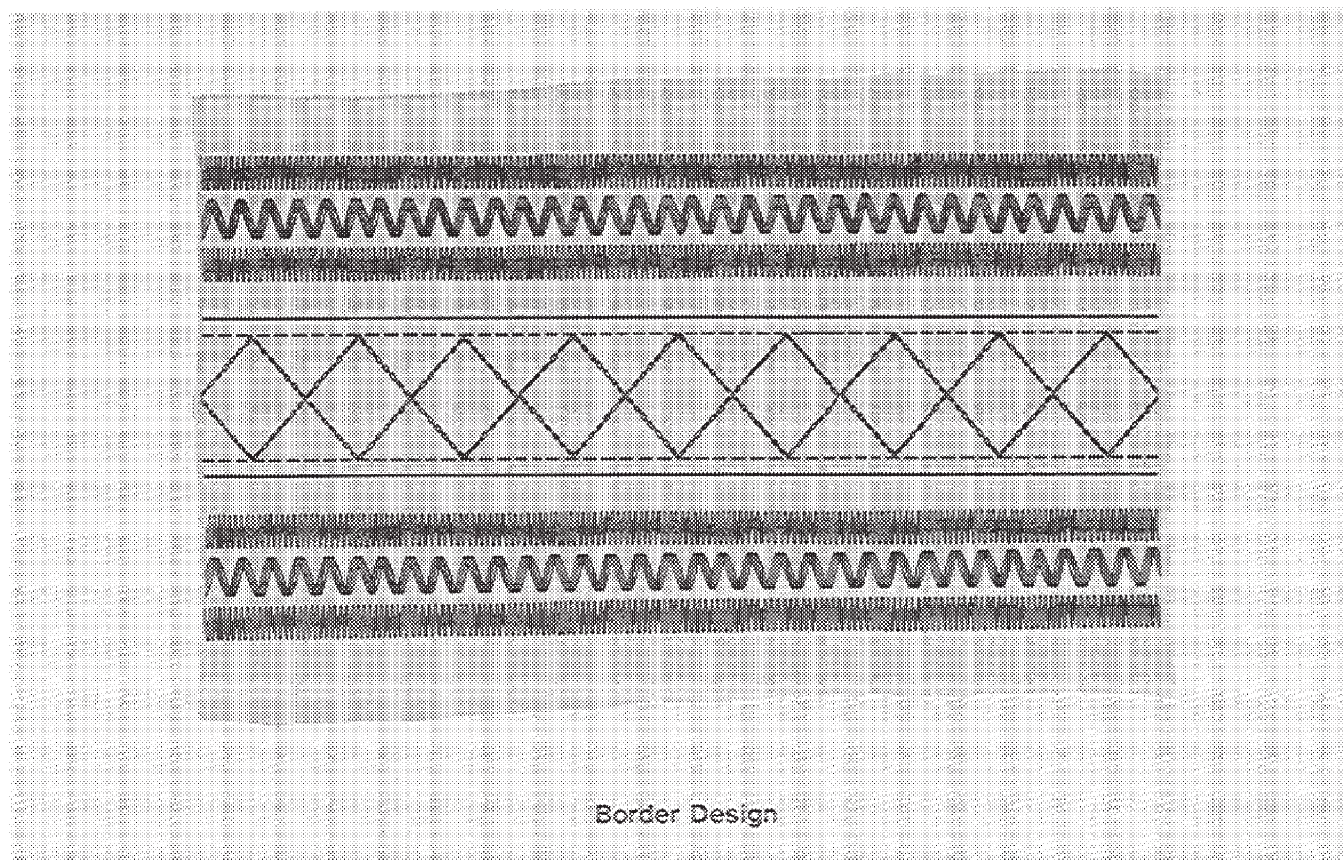


Lace Insertion

## *decorative stitching*

Your new SINGER sewing machine has several decorative stitches. These versatile stitches allow you to add imagination and creativity to your sewing projects. With these decorative stitches, you can apply to clothes and household items: interesting details, youthful and feminine accents, and personalized effects.

Some of the many applications of the decorative stitches include border designs, appliques, twin-needle stitching, finished hems, smocking, embroidering, monograms and topstitching accent lines on clothes. The following pages illustrate several of the decorative stitches on your machine and provide examples for their creative use.



### **BORDER DESIGNS**

Border designs that add a decorative touch to wearing apparel and household items can be created by combining different types of straight stitching and zig-zag stitching. Simple or elaborate, delicate or bold, they can be varied to suit the application. Use them as you would a braid or to simulate horizontal, vertical or bias stripes on plain fabric.

### **Procedure**

Mark or crease fabric for the center line of first row of stitching. If spacing between rows is not greater than 1/2-inch (1.3cm), gauge additional rows with the presser foot. If spacing is wider, mark for each line of stitching. Use a backing of crisp lawn, organdy or a fusible interfacing and be sure to make a test sample on a swatch of your fabric to check stitch settings and thread tension.

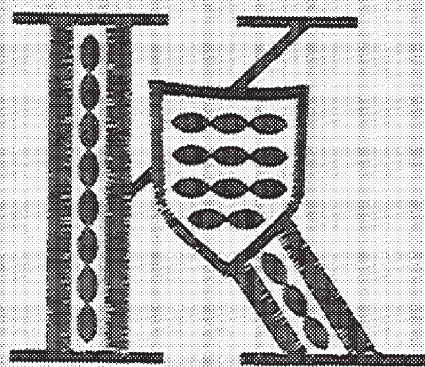
## MONOGRAMS

Many decorative stitch patterns can be used for monograms and motifs—to add a personal touch to jacket yokes, for example, or for initialing household linens. You can buy designs or create them yourself to suit the stitch pattern you wish to use.

Very simple straight-line monograms can be made with the plain zig-zag stitch, or you can

create a motif by arranging individual pattern units to form a design. (Detailed information on pattern repeat button on page 21.)

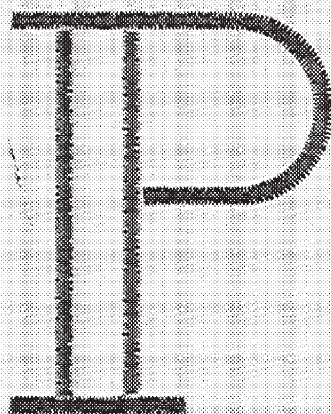
When you use a decorative stitch pattern to form a motif, your machine will automatically be programmed to start at the beginning of the pyramid, bead, or whatever pattern you have selected.



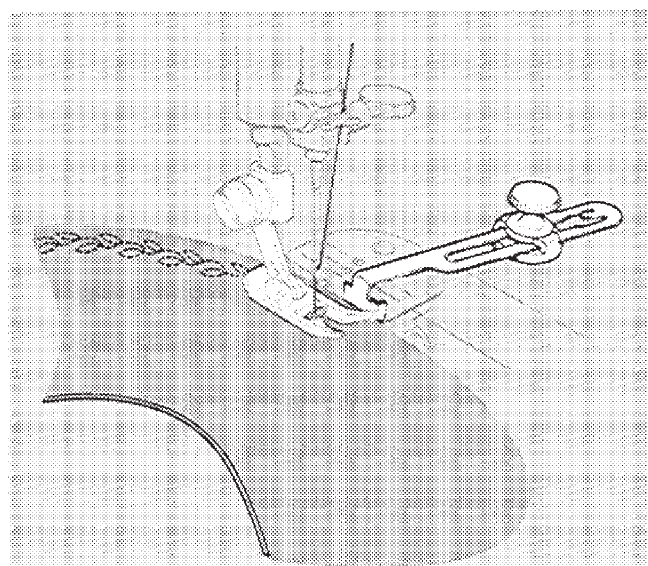
Monogram in Plain Zig-Zag and Bead Stitch



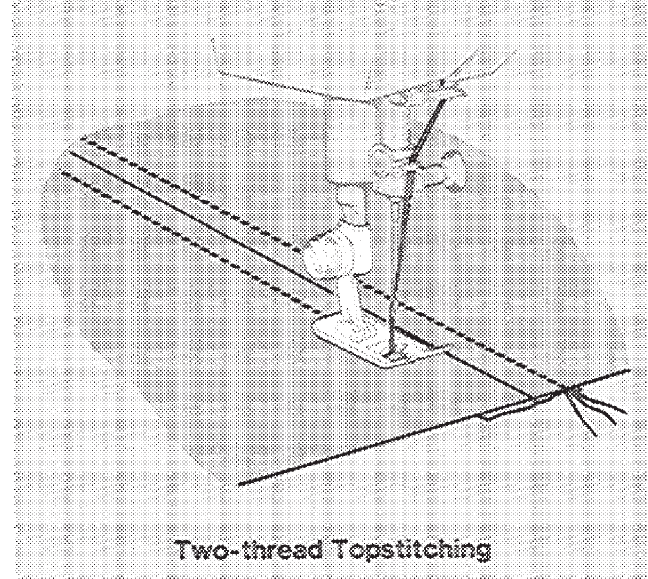
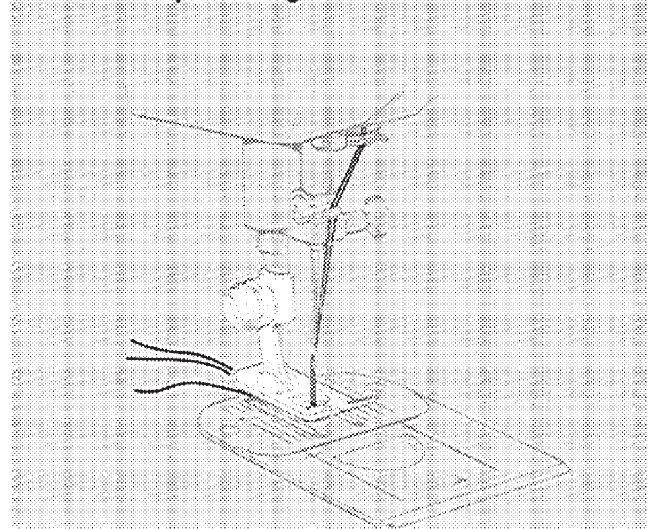
Initial in Plain Zig-Zag and Bead Stitch



Line Monogram in Plain Zig-Zag Stitch



Topstitching with Leaf Stitch



Two-thread Topstitching

## TOPSTITCHING

A practical, simple way to accent the lines of a dress or coat is to place one or more rows of stitching along collars, lapels, facing edges, hems, pockets, seams, etc. For a tailored look, use lines of regular straight stitching; sew them with buttonhole twist (or double strands of regular thread) for added emphasis. For decorative interest, use a zig-zag stitch. The even feed foot, available for separate purchase at your local *SINGER* store, will help you place stitching evenly and accurately. To keep stitching at an even distance from the fabric edge, use the seam guide.

### Two-thread Topstitching

Bold, well-defined topstitching is produced by using two strands of regular thread in the needle instead of a single strand. Ideal for summer knits, linens, cottons, denims, and vinyls, two thread topstitching is economical and particularly appropriate for use when a non-lustrous, washable finish is required.

- Select a size 16, Style 2020 needle for woven fabric and use a size 14, Style 2045 *Yellow Band* needle for knits. Refer to Fabric, Thread and Needle Chart on page 12.
- Select straight stitching.
- Clip detachable spool pin to thread guidepost.
- Using the two threads, thread the machine in the regular way for single-needle stitching. For best results, use size 50 mercerized cotton thread or cotton-wrapped polyester thread.
- Pass threads together into tension discs and threading points above the needle.
- Cut thread ends diagonally and draw both through the eye of the needle.
- Make a stitching test to determine the best stitch length and needle-thread tension. A long stitch, 2.5 to 4 on your stitch length dial, is usually best.
- Sew at moderate speed.

## SMOCKING

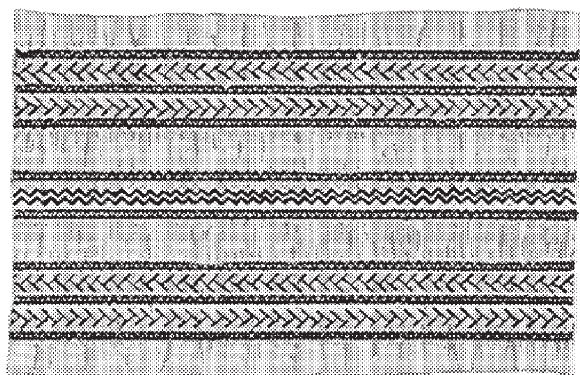
Smocking is a youthful decorative detail that is particularly charming when used for a yoke, insert or band on baby clothes, little girls' dresses, or lingerie.

When worked by hand, smocking is a time-consuming process. However, the heavy-stitched look, typical of hand work, can be stitched quickly and easily with your machine when you use decorative patterns.

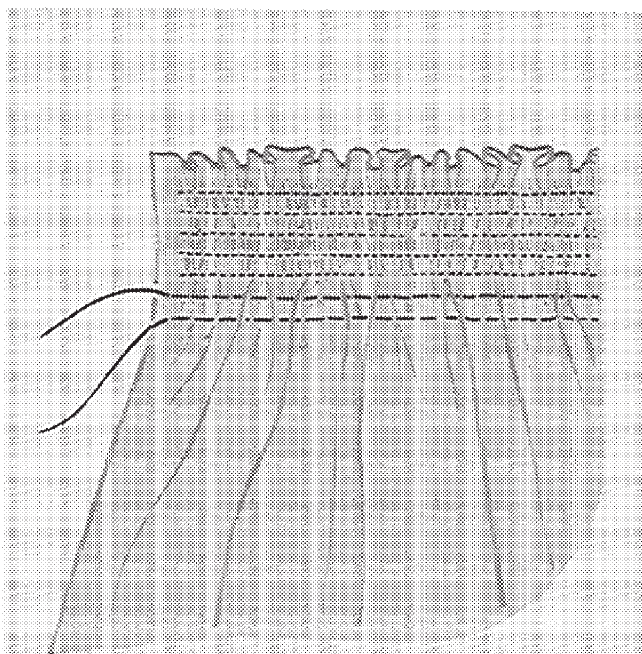
### Procedure:

1. Space rows of straight stitching with stitch length pointer set on 5; 1/4-inch (6mm) apart, on the crosswise fabric grain. Set tension dial between 0 and 1.
2. Pull up evenly for the amount of fullness desired. Secure thread ends by tying knots close to the fabric to prevent gathers from pulling out of position.
3. Baste section or area to be smocked to underlay.
4. Stitch over and between rows of gathering with decorative stitching. Create your own design or adapt the ones illustrated. Use thread that contrasts with or matches your fabric, depending on the effect desired.

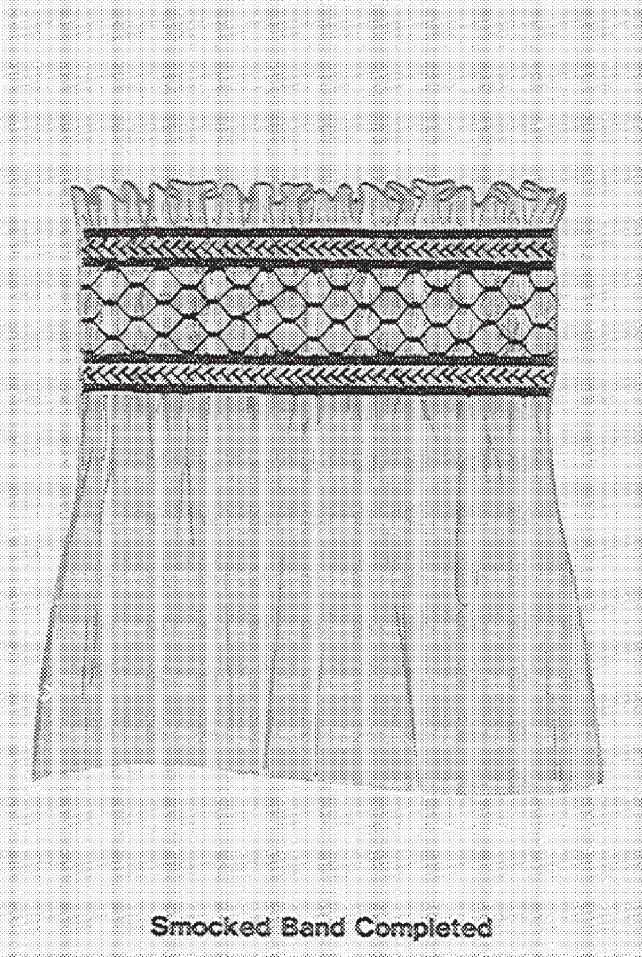
A test sample is always advisable to check stitch settings. Be sure to use the same fabric and degree of fullness you plan for your garment.



**Smocked Band Accented  
with Cording**

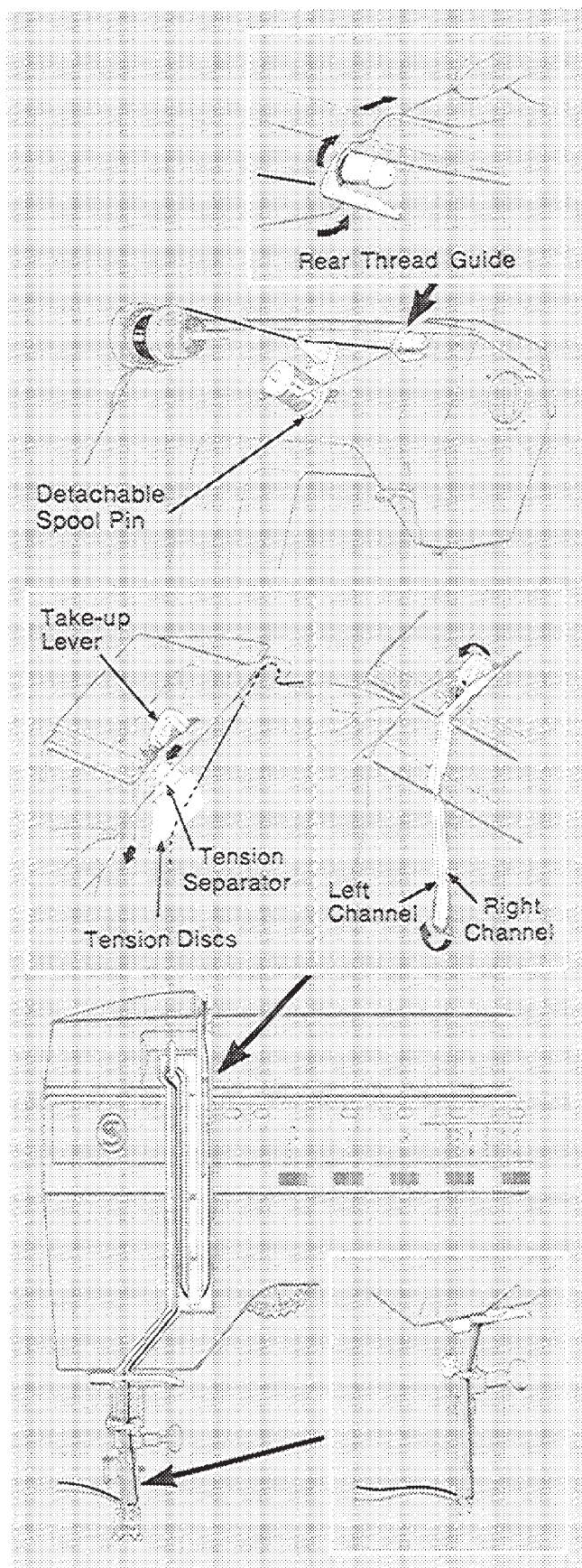


**Gathering Stitches for  
Smocked Band**



**Smocked Band Completed**





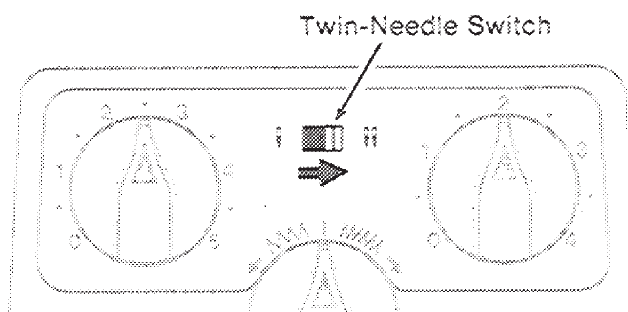


## TWIN-NEEDLE STITCHING

The twin-needle simultaneously produces two parallel, closely spaced lines of decorative stitching. You can stitch with either one or two colors of thread.

- Stitch length: to suit fabric
- Stitch width: to suit fabric
- General purpose foot
- General purpose needle plate

**Caution:** Always move the twin-needle switch to the *right* (  ) before stitching with the twin-needle. Unless this switch has been activated, needle breakage will result. Upon completion of your twin-needle sewing, return switch to its *left* position (  ).




## Procedure


- Thread machine with first thread in usual manner, making certain it passes between tension separator and right-hand tension disc.
- Wind bobbin with enough thread to complete stitching. (Since a bobbin cannot be filled after a twin-needle is inserted, it is wise to keep an extra wound bobbin on hand for replacement.)
- Unthread and remove needle.
- Attach detachable spool pin to thread guidepost and insert the twin needle.
- Pass first thread through right eye of needle.
- Place second spool of thread on detachable spool pin and thread as before, except bypass snap-in thread guidepost and pass thread between tension separator and left-hand tension disc and through left eye of needle.

# 7. BUTTONS AND BUTTONHOLES

## buttons

- Stitch: overedge stretch stitch 
- Stitch width: to suit button
- Stitch length: 0
- Button foot
- Feed cover plate

### ATTACHING A BUTTON

- Attach button foot and feed cover plate to machine and turn on machine.
- Select overedge stretch stitch .
- Turn hand wheel *toward you* until needle moves to left side.
- Place garment under foot, then position button on garment.
- Turn hand wheel again to lower needle into left hole of button, and lower foot.
- Turn hand wheel again carefully until needle is just above right hole. Adjust stitch width, if required, so that needle will enter right hole of button. See page 22 for information on stitch width control.
- Run machine slowly. Allow at least three groups of crossover stitches to enter right hole of button. Finish sewing on left side,

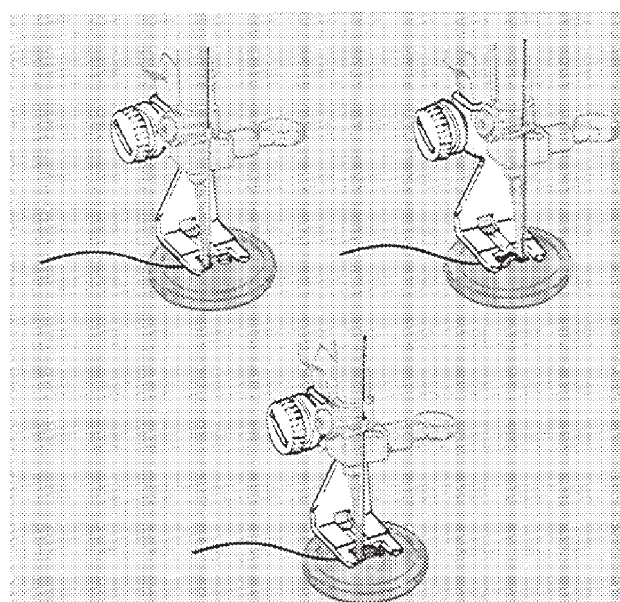
taking two or three tying stitches.

- Remove work from machine leaving 4 inches (10cm) of thread, pull thread ends through to inside of garment, and knot them close to fabric to form a secure finish.

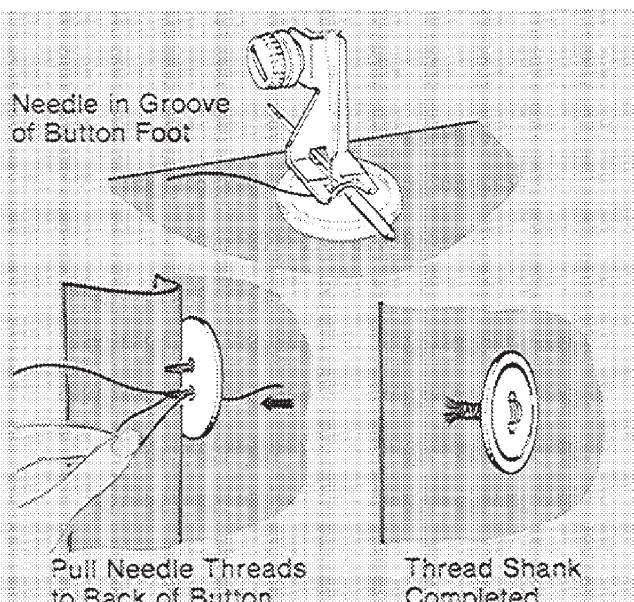
### FORMING A THREAD SHANK

Buttons sewn on coats and jackets should have a thread shank to make them stand away from the fabric. A thread shank is formed by sewing over the blade of a regular machine needle.

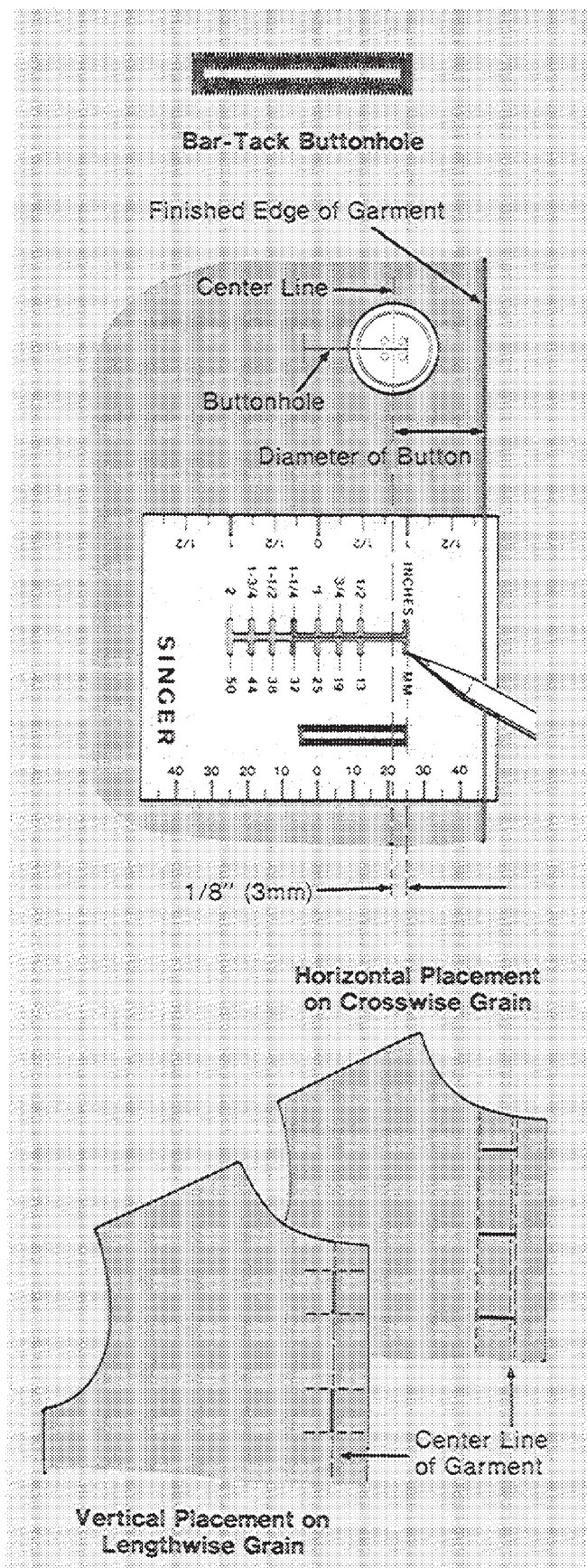
- Position needle, garment and button as described above.
- Place needle in groove of foot so that point enters hole in foot first, as shown. The further in you push needle, the longer the shank will be.
- After stitching, remove needle from groove of button foot, remove work from machine, and cut threads about 6 inches (15cm) from fabric.
- Pull needle thread ends to back of button, form a firm shank between button and fabric by winding threads tightly around attaching stitches, and tie thread ends securely.



Attaching a Button



Forming Thread Shank



## buttonholes

Your new machine comes complete with a built-in two step buttonhole system. Before sewing on your garment always make a test buttonhole duplicating the number of thicknesses of fabric and interfacing if appropriate.

### BUTTONHOLE POSITION

Accurate guidelines are essential to keep buttonholes at a uniform distance from the edge of the garment, evenly spaced, and on the grain of the material.

1. Mark the center line of the garment using hand basting, machine speed basting or with the buttonhole gauge found in the accessory box, and tailor's chalk. For machine speed basting information see page 27.

- Be sure that the space from the center line to the finished edge of the garment is at least equal to three-quarters the diameter of the button. (With this spacing, the button will not extend beyond the edge when the garment is buttoned.)
- Make sure that the center line marking follows a lengthwise fabric thread.

2. Mark a position guideline for each buttonhole.

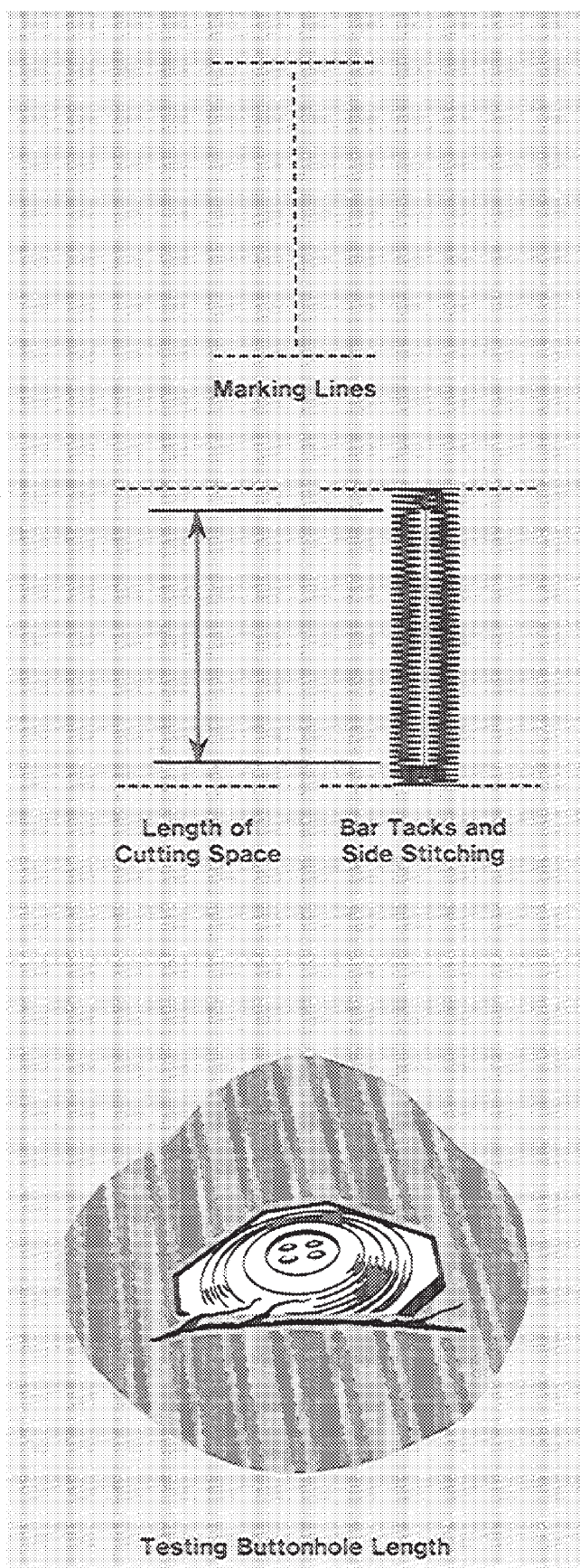
- **Horizontal** buttonholes are placed to extend 1/8-inch (3mm) beyond the center line of the garment, as shown, so that the buttons will be in the center of the figure when the garment is fastened.
- Horizontal buttonhole guidelines should follow a crosswise fabric thread and be longer than the finished length of the buttonhole.
- Mark ends of each buttonhole vertically.
- **Vertical** buttonholes are placed so that the center line of the garment is in the center of the buttonhole, as shown.
- Mark the ends of each buttonhole horizontally across the center line basting and use the center line marking as the buttonhole guide when stitching.

## BUTTONHOLE LENGTH

A buttonhole length should be just long enough to allow the button to slip through the opening without stretching it.

- Estimate the proper buttonhole length by measuring the width plus the thickness of the button.
- To make sure the measurement is correct, cut a slit in a scrap of fabric equal to the diameter of the button you intend to use.
- Increase length of opening until button slips through easily.

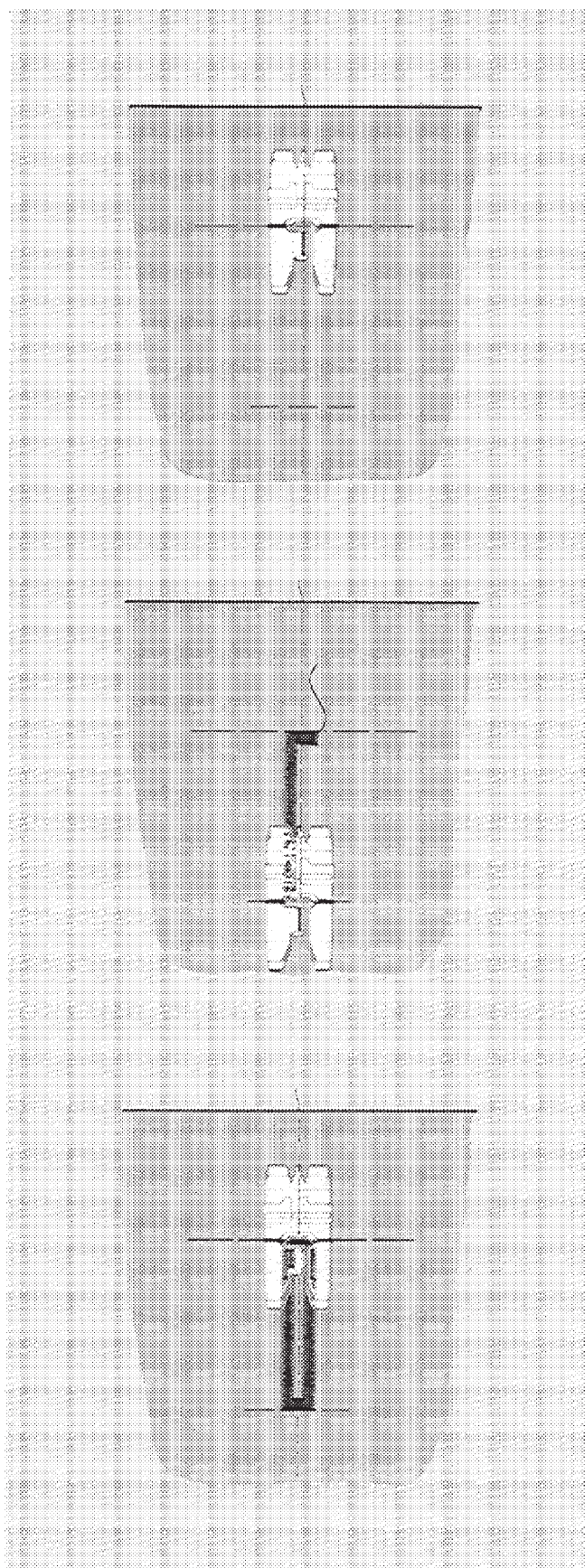
This test is particularly advisable for buttons of unusual shape or thickness.



## BUTTONHOLE INTERFACING

It is almost always advisable to use an interfacing in the buttonhole area. An interfacing holds the fabric firmly so that a neat buttonhole may be stitched and keeps the finished buttonhole in shape. Interfacing is essential when the fabric is loosely woven or is a crepe or knit that stretches easily.

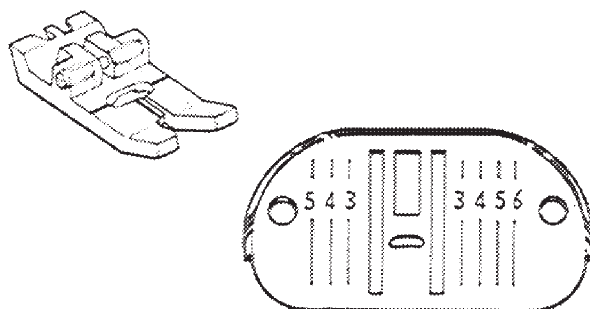
When planning your garment, remember that bar tack buttonholes are stitched through three thicknesses of fabric — garment, interfacing and facing — after the facing has been attached.



## TWO-STEP BUTTONHOLING

Make a test buttonhole on a sample of your fabric, with interfacing if being used, before working on your garment.

- Determine length of button and mark start and end line of buttonhole on fabric.
- Attach general purpose needle plate and two-step buttonhole foot.


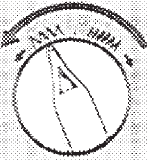


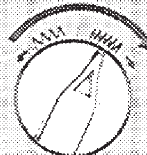



- Draw needle and bobbin threads under foot towards back of machine.
- Place fabric under foot so that buttonhole start line is aligned with red guideline on foot. Lower foot.
- Select left side of buttonhole by pushing button on pattern selection panel.
- Select slow speed, start machine and let it complete left side of buttonhole.
- Stop machine just before guideline on buttonhole foot reaches the buttonhole end line of the fabric.
- Select right side of buttonhole by pushing button on pattern selection panel.
- Start machine and let it complete right side of buttonhole. Stop sewing when stitching reaches starting bar tack.

If the test buttonhole is not to your liking or does not suit your fabric for any of the following reasons, the procedure below shows you how to correct the appearance.


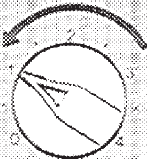


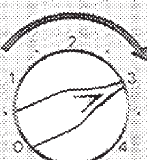

### BALANCING THE BUTTONHOLE

If the right side of your programmed buttonhole does not match the left side, you may adjust the *right side* by turning the *reverse stitch-balance control pointer*.

| IF   | THEN DO THIS   | RESULT  |
|--|--|---|
|  <p>Right leg with stitches are too close</p>     |  <p>Will cause the stitches to become farther apart on the right leg.</p> |  |
|  <p>Right leg with stitches are too far apart</p> |  <p>Will cause stitches on the right leg to become closer together</p>    |  |

### CHANGING STITCH DENSITY

If you want the stitches closer together or farther apart on both legs of the buttonhole use the *Stitch Length Dial*.

| IF   | THEN DO THIS  | RESULT  |
|--|---|---|
|  <p>Stitches are too far apart</p> |  <p>Will cause stitches to become closer together</p> |   |
|  <p>Stitches are too close</p>    |  <p>Will cause stitches to become farther apart.</p> |  |

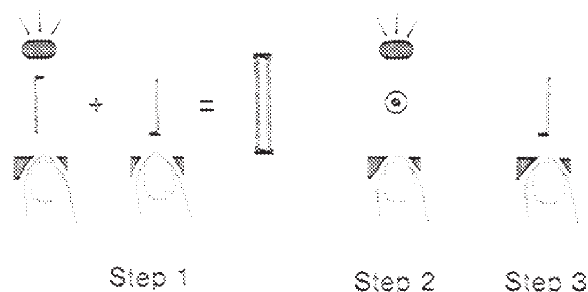
### Stitching a Series of Buttonholes

If the test buttonhole suits your purpose, you may stitch additional identical buttonholes by using the pattern repeat button on your machine. To use this method follow the procedure below.

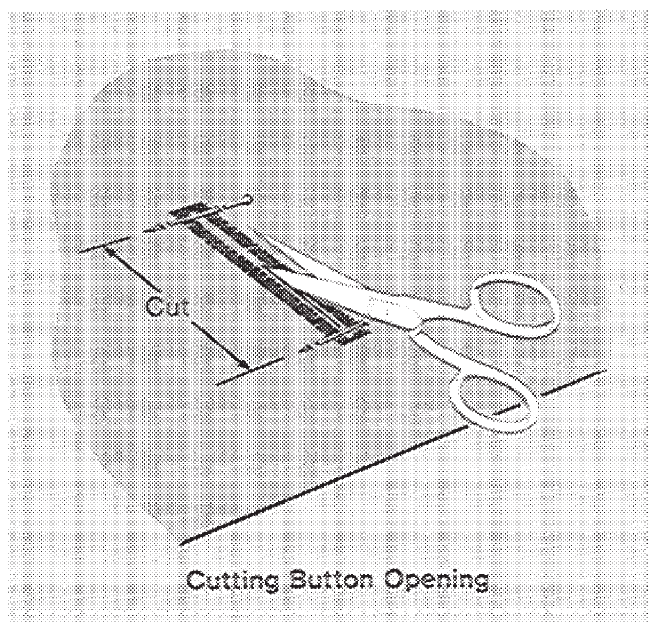
Step 1. Sew one complete buttonhole on your machine.

Step 2. Press the pattern repeat button on your machine. (This will stitch the left side of your buttonhole automatically for you.) Stop machine when desired buttonhole length is reached.

Step 3. Press the stitch selection button for the right side of your buttonhole.

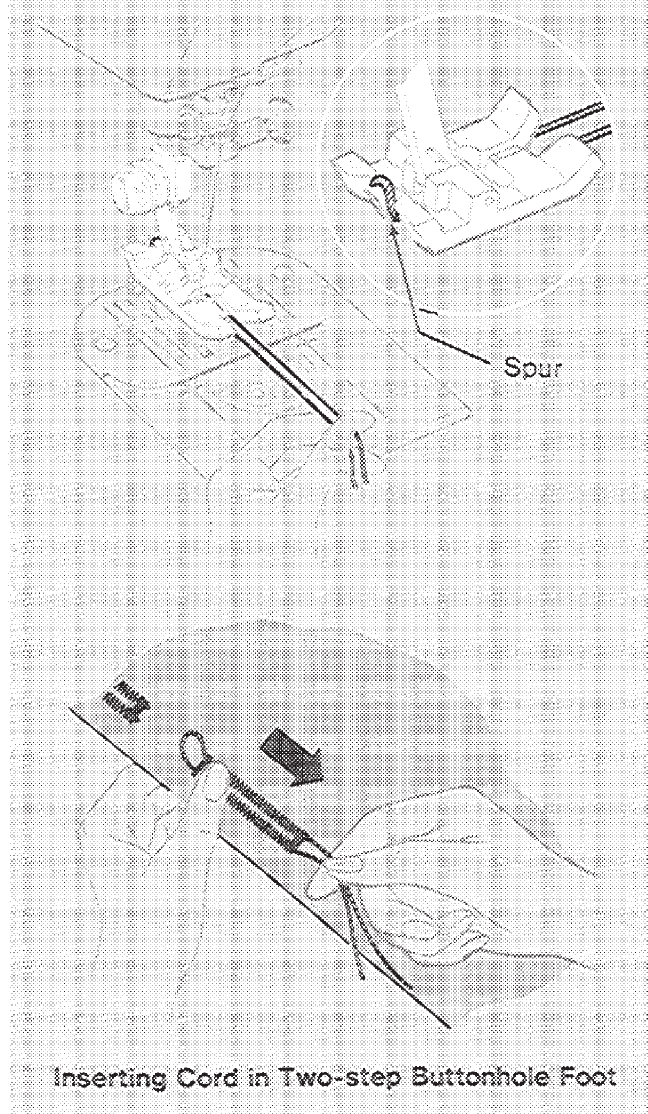


Follow steps 2 and 3 until your series of buttonholes is completed.



## CUTTING BUTTON OPENING

- Place a pin across the cutting space at each end of the buttonhole to protect bar tacks.
- Use a pair of small, sharp scissors to cut the button opening.
- Insert blade in center of the buttonhole cutting space and cut from this point in either direction.



## CORDED BUTTONHOLES

Soft threads used for embroidery and crocheting make suitable filler cords for raised buttonholes. A fine pearl cotton or silk buttonhole twist is generally used.

### Inserting Cord in Two-step Buttonhole Foot

- With foot up, pass a loop of filler cord around the spur at the back of the foot. Draw ends of cord under the foot and pull taut to secure in spur notches.
- Hold cord ends, as shown, during stitching.

### Procedure

- Insert cord in buttonhole foot as shown and sew buttonhole in the usual way.
- Remove work from machine when the buttonhole is completed.
- Hold end of buttonhole where cord is looped, with one hand, and pull the loose ends of the cord firmly to draw the surplus loop of cord back through the buttonhole.
- Trim away ends of cord.
- Secure ends of buttonhole threads.
- Cut buttonhole opening in the usual way.

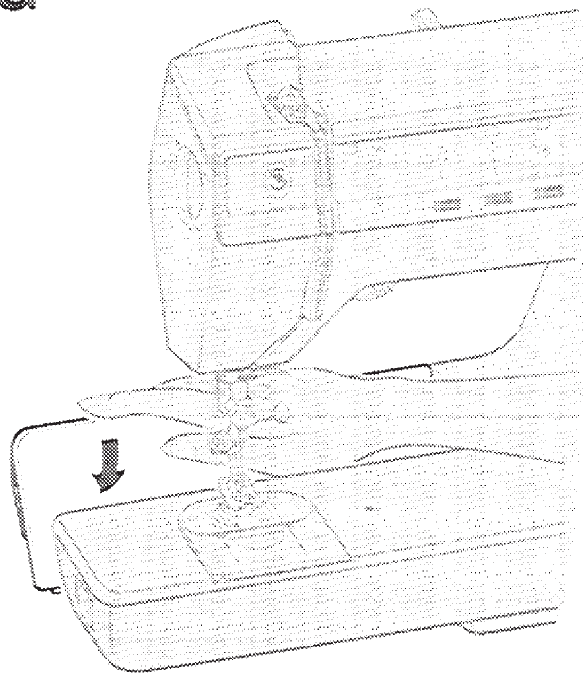


## 8. FREE-ARM SEWING

Fabric handling, when sewing tubular and hard to reach garment areas, is simplified when you convert your sewing machine to free-arm sewing. Some of the sewing jobs for which you will find the free arm particularly useful are shown on pages 75 through 78. You will discover many more for yourself. The following simple steps tell you how to convert your machine for free-arm sewing.

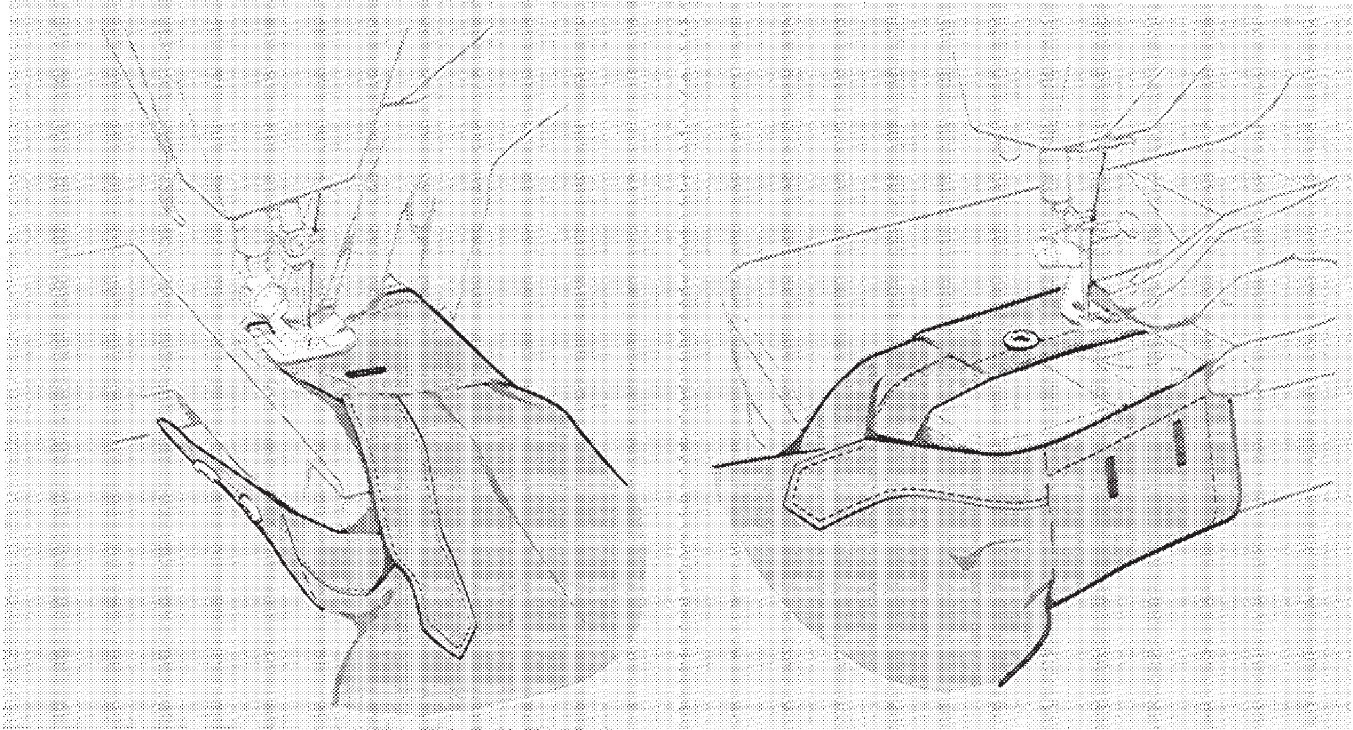
### *preparation*

To convert to free-arm sewing, simply press down on corner of *Flip & Sew* panel on sewing machine.



### *applications*

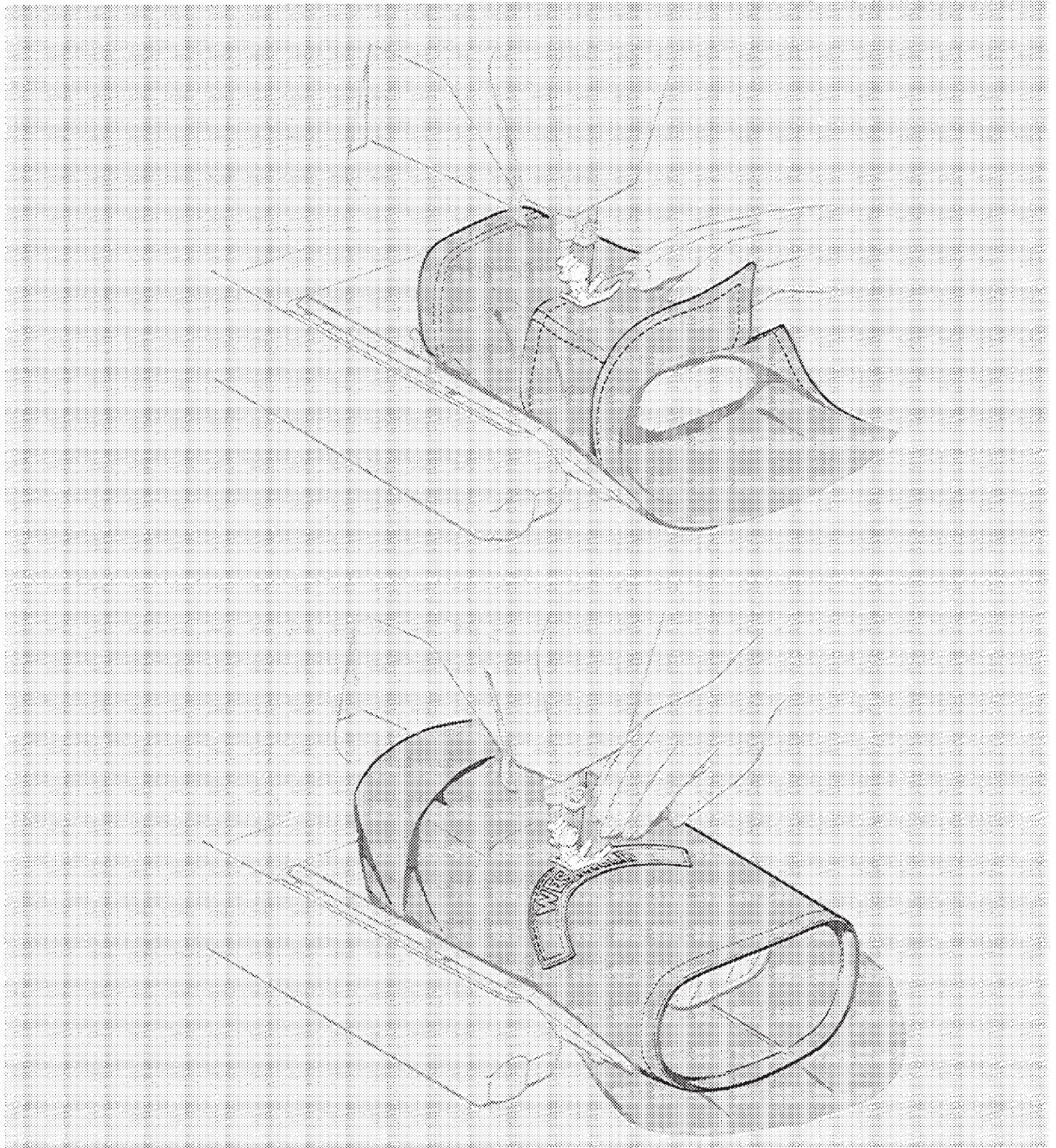
#### **BUTTONHOLES AND BUTTONS**



Stitching buttonholes or sewing buttons on a cuff or neckband is no longer a task when the free-arm surface is used. Cuffs slip around the sewing surface without being pulled out of shape, so you can see and handle the stitching area easily.

For buttonholing, follow the instructions for two-step buttonholes that start on page 72. Button-sewing instruction is given on page 69.

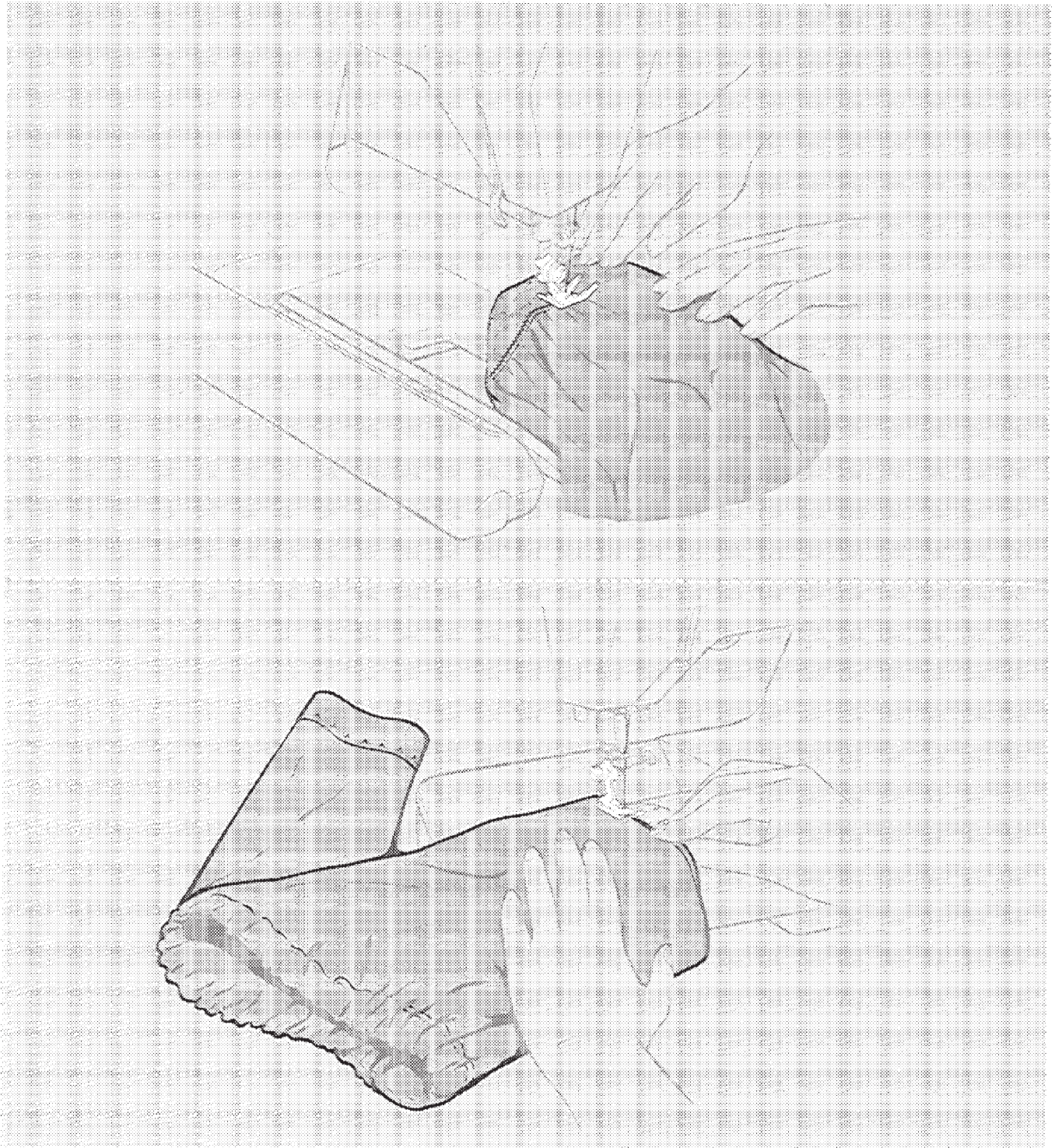
## SLEEVES



Free-arm sewing takes the difficulty out of topstitching a sleeve. The armhole rotates smoothly under the needle so that you can place stitching accurately. The extra control afforded by the free arm is especially helpful for topstitching flat-fell seams.

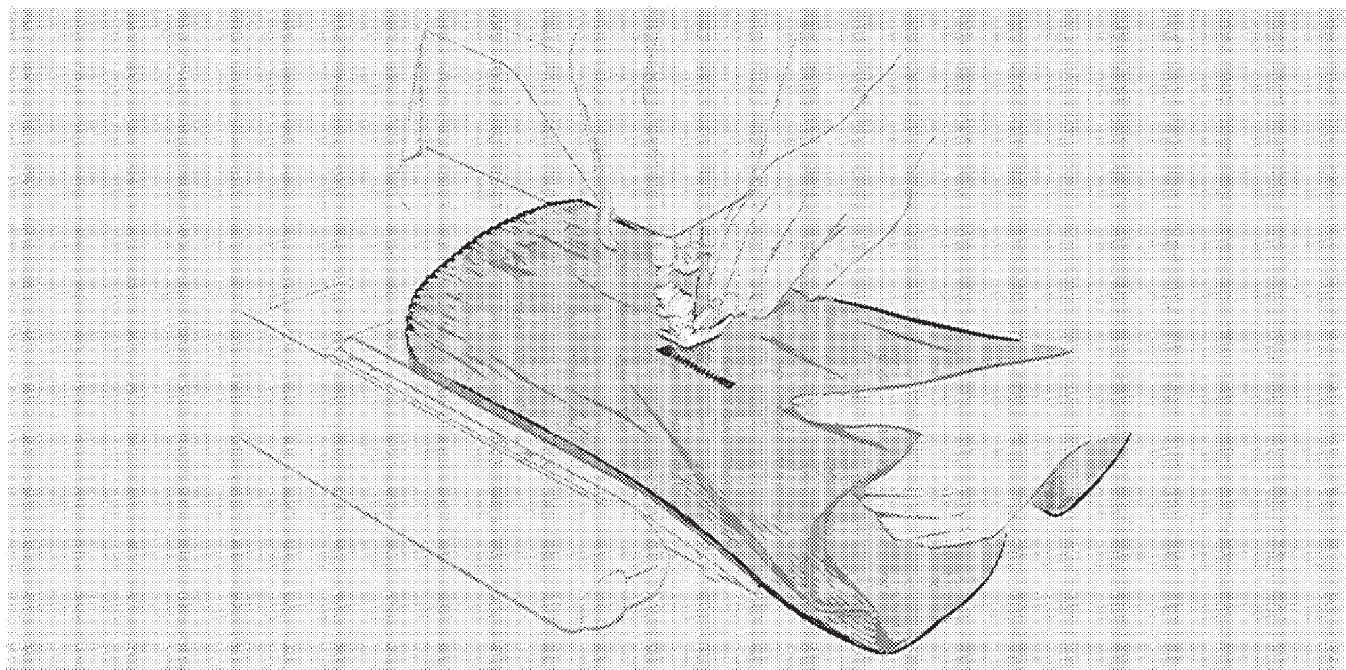
Badges, emblems and insignia of all sizes and shapes can be quickly attached to shirts and uniforms by slipping sleeve or hard-to-reach area over the sewing surface.

## EDGE FINISHES



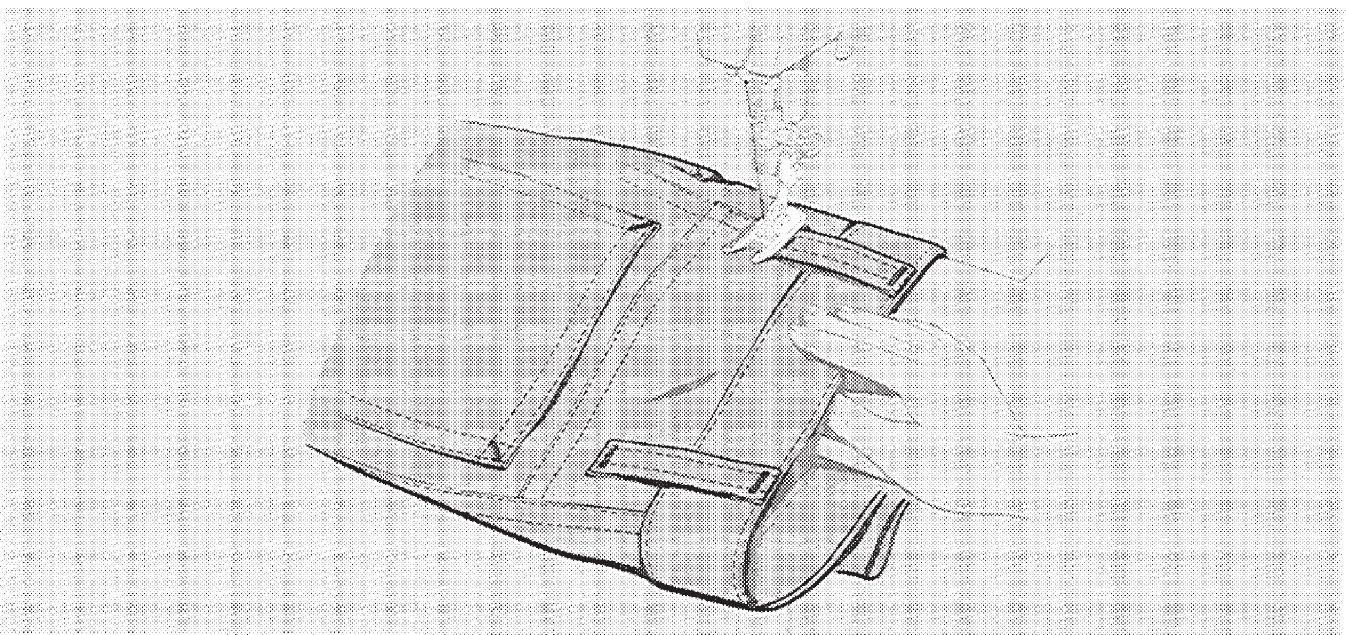
The free-arm surface makes it easy to finish sleeves, pant legs and waistlines. These circular garment areas rotate smoothly around the sewing surface, giving you full visibility and control as you blindstitch hems, attach elastic, or topstitch cuffs.

## DARNING AND MENDING



Knees, elbows and other areas of wear in children's clothes, sweaters, jackets and shorts become readily accessible for darning, mending or patching when the free-arm surface is used. The sewing surface fits inside the enclosed sleeve and leg areas, making it unnecessary to open seams or roll the garment. For darning, follow the instructions on page 32 and refer to page 58 for mending information.

## BARTACKS



Bar tacks reinforce areas of strain and can be applied to ready-made garments, as well as to those sewn at home. Use the free-arm surface to avoid fabric bulk around the needle when you apply this detail to pockets, plackets, and waistlines.

## 9. PERFORMANCE CHECKLIST

Whenever sewing difficulty is encountered, review the sections of the instruction book that explain the operation you are performing

to make sure you are using the machine correctly. If the problem still exists, the following check list may help you to correct it.

---

### MACHINE DOES NOT SEW

**Needle bar does not move.**

Make sure . . .

- Power and light switch is on.
  - Motor is connected to electrical supply.
- (Turn to page 9 for additional information.)

**Needle bar moves but stitch is not formed.**

Make sure . . .

- Needle is straight and sharp.
- Needle style is correct for machine.
- Needle size is correct for thread being used.
- Machine is correctly threaded.

(Turn to page 6 for additional information.)

- Bobbin contains thread.
- Bobbin latch is in SEW position.
- Bobbin case area is free of lint and loose threads.
- Circuit breaker is depressed. (See page 83.)

(Turn to page 16 for additional information.)

**Needle breaks.**

Make sure . . .

- Needle is straight and sharp, correct class for machine, and proper size for thread being used.

- Needle is fully inserted into needle clamp.

(Turn to page 6 for additional information.)

- Presser foot or accessory is securely fastened to presser bar. (See page 7.)
- Fabric is not being pulled to one side as work is removed from machine.
- Fabric being guided or supported behind the needle is not being pulled too hard or too fast.

(Turn to page 46 for additional information.)

### BOBBIN WINDING DIFFICULTIES

Turn to page 16 for bobbin winding information.

**Needle thread breaks while winding bobbin.**

Make sure . . .

- Presser bar is raised.
- Thread is unwinding freely from spool.
- Thread spool is secured by correct spool holder.
- Machine is correctly threaded.

**Thread does not wind onto bobbin.**

Make sure . . .

- Bobbin latch is in winding position.
- Thread end is held securely by thumb screw spring at start of wind.

### **Bobbin displaced during winding.**

Make sure . . .

- Bobbin is being wound at **SLOW** speed range.
- Bobbin is properly seated and secured by the latch in the bobbin case.

### **Thread breaks on sewing starts after winding bobbin.**

Make sure . . .

- Bobbin has not been wound too full (beyond the **FULL** ring). Turn handwheel away from operator to free over wound bobbin. (See page 16.)
- Bobbin case area is free of lint and loose threads. (See page 82.)

(Turn to page 16 for bobbin information.)

## **THREAD BREAKS WHILE SEWING**

### **Needle thread breaks.**

Make sure . . .

- Machine is properly threaded.
- Thread is unwinding freely from spool.
- Thread spool is secured by correct holder.
- Thread is even and free from knots.

(Turn to page 14 for additional information.)

- Needle is correct size for thread.
- Needle is straight and sharp.

(Turn to page 6 for additional information.)

- Needle thread tension is not too tight. (See page 26.)
- Bobbin is correctly inserted in machine. (See page 17.)
- Bobbin rim is free of nicks.
- Needle plate hole and presser foot are undamaged.

- Threads are correctly placed under presser foot when starting to sew. (See page 16.)

- Presser foot is securely fastened to presser bar. (See page 7.)

(Turn to page 7 for additional information.)

### **Bobbin thread breaks.**

Make sure . . .

- Bobbin has been correctly wound.
- Bobbin case area is free of lint.
- Bobbin has been correctly inserted into bobbin case.
- Bobbin has not been wound too full.

(Turn to page 7 for additional information.)

## **STITCHING DIFFICULTIES**

### **Skipped stitches.**

Make sure . . .

- Needle is straight and sharp.
- Needle is correct style for machine and size of thread (See page 12).
- Machine is properly threaded. (See page 14.)
- Fabric is held down firmly (particularly when doing free-motion darning and embroidery).
- Correct presser foot and needle plate are being used.

### **Loose stitches on underside of fabric.**

Make sure . . .

- Needle is straight and sharp.
- Needle is correct style for machine and size for thread (See page 12).
- Sufficient tension is being exerted on needle thread. (See page 26.)
- Bobbin case area is free of lint.

- Bobbin has not been wound beyond the **FULL** ring.
- Presser bar has been lowered (particularly when sewing dense fabric or doing free-motion darning and embroidery).

#### **Loose irregular straight stitches.**

Make sure . . .

- Needle thread has sufficient tension. (See page 26.)
- Needle plate and presser foot are correct for fabric being sewn.

#### **Fabric does not lie flat after stitching.**

Make sure . . .

- Needle-thread tension is light enough. (See page 26.)
- There is sufficient presser foot pressure to hold fabric. (See page 46.)
- Stitch length is short enough for fabric. (See page 22.)

- Correct presser foot is being used.
- Machine is correctly threaded. (See page 14.)

### **FEEDING DIFFICULTIES**

**Fabric does not move properly under presser foot.**

Make sure . . .

- Presser bar pressure is correct for fabric being stitched. (See page 46.)
- Presser foot or accessory is correctly attached to machine. (See page 7.)
- Lint has not accumulated around feed.

### **SLUGGISH OR NOISY MACHINE**

**Hand wheel difficult to turn over manually or increase in operating noise level.**

Make sure . . .

- Bobbin case and feed area are free of lint and loose thread ends.



# 10. CARING FOR YOUR MACHINE

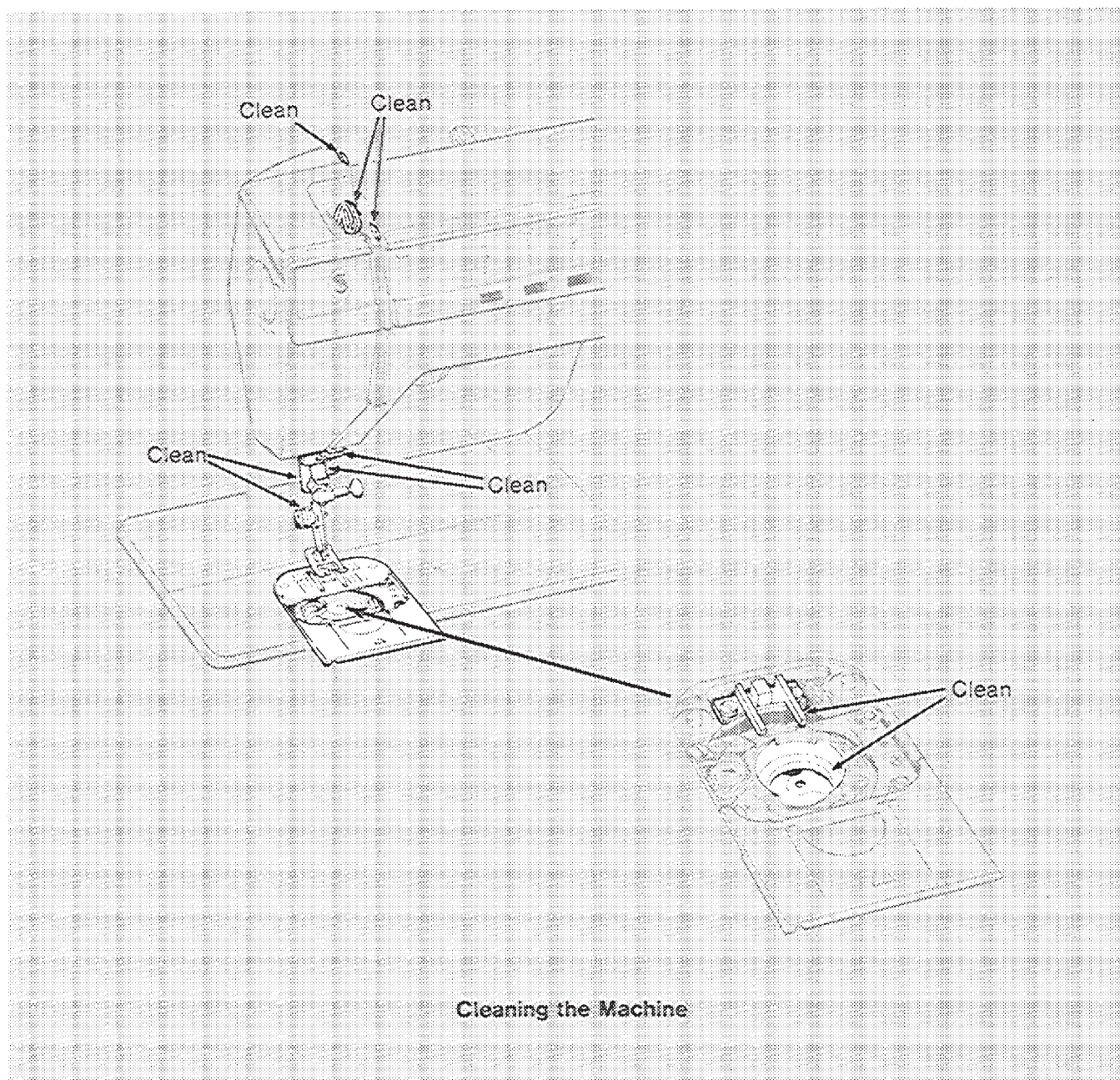
## CLEANING THE MACHINE

**Caution:** Before cleaning your machine, disconnect power-line plug from electrical supply. With a soft cloth or lint brush, clean at points indicated by arrows.

Your machine requires no oiling under normal conditions. Your SINGER representative, or

Approved Dealer, will examine the permanently lubricated parts whenever your sewing machine requires servicing.

**Note:** There are no user-serviceable parts inside the Athena 1200 electronic sewing machine. Therefore any unauthorized tampering inside the machine will void the warranty.



## CHANGING THE LIGHT BULB

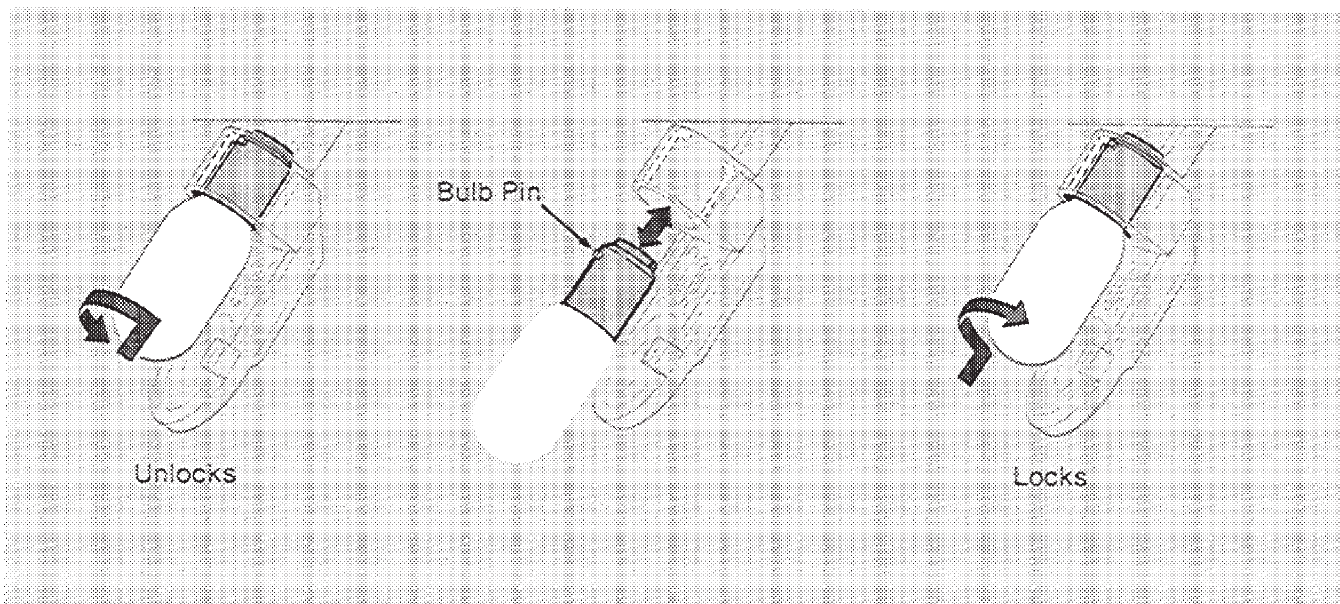
**Caution:** Before changing light bulb make sure you have disconnected power-line plug from electrical outlet.

**Removing Bulb.** With thumb of right hand, push in and down on tab of light lens and lower the light bracket. *Do not attempt to unscrew the bulb.* Press it up into the socket and at the same time turn bulb over in direc-

tion shown to unlock the bulb pin.

**Caution:** Be sure to use a 15 watt bulb only.

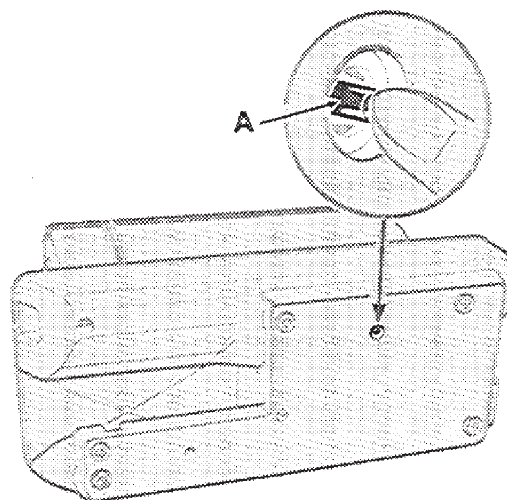
**Replacing Bulb.** Press new bulb into socket, with bulb pin entering slot of socket, and turn it over in direction shown to lock bulb in position. Push entire assembly up until it snaps in position.



## circuit breaker

The electronic system of your machine is protected by a circuit breaker. If the sewing light goes on and the needle bar moves up and down, but you cannot select a pattern, you must push the red circuit breaker button (A) to reactivate the machine. If your machine is a portable model, carefully lift or tilt it to gain access to the button. Push button in. If your machine is secured to a cabinet, reach under front of cabinet and locate the special hole which gives you access to the button. Push button. Certain cabinet models may not have an access hole. In such instances, release the machine from the cabinet, tilt machine, and push button. Re-secure machine to cabinet. Re-select desired pattern.

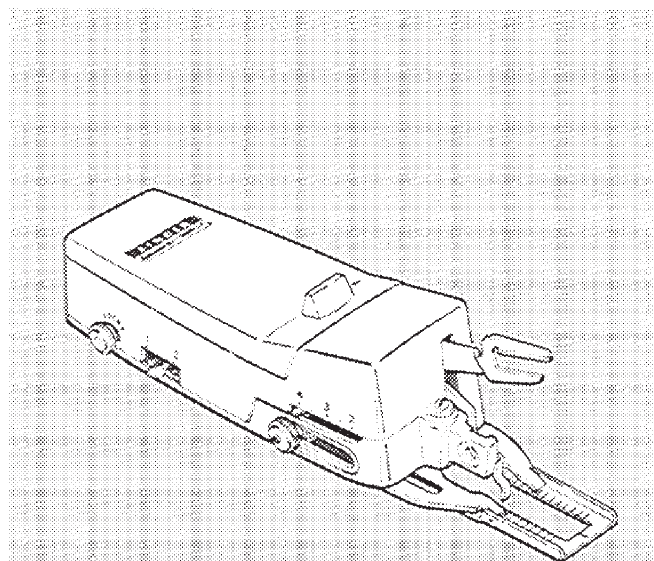
**Note:** If button continues to disengage, contact your Singer representative or Approved Dealer.



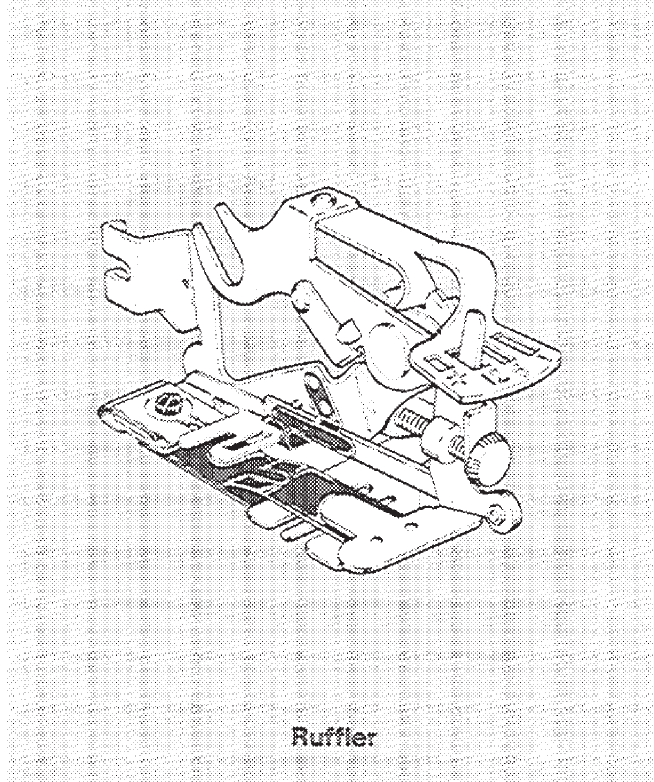
Circuit Breaker

# 11. SEWING AIDS

## *special accessories for special jobs*



*Professional Buttonholer*



*Ruffler*

Sewing Aids have been designed to increase the versatility of your sewing machine and enable you to give your sewing that extra professional touch. The ones described below are just a few of the complete selection available at your local Singer store.

### ***Professional\* Buttonholer***      No. 381116

The *Professional Buttonholer* sews six kinds of buttonholes, plus eyelets, in a wide variety of fabrics. You choose the style and length and make perfect buttonholes every time.

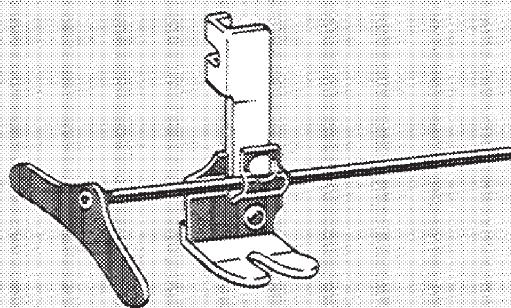
### ***Ruffler***      No. 161561

This accessory offers a simple, effective way to make gathered and pleated ruffles. The ruffler is used for straight stitching only.

### Quilting Foot

No. 160691

The quilting foot is especially well adapted to stitching lightly padded fabrics. It is excellent for the placement of straight stitching in block, floral, or scroll designs. This short, open foot permits following curved lines with ease and accuracy.

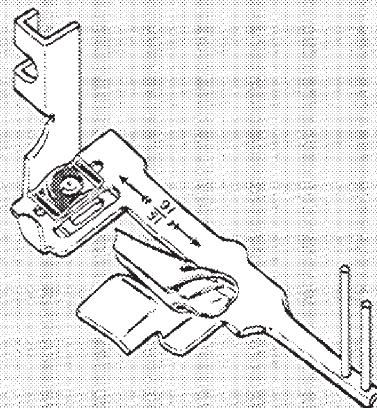


Quilting Foot

### Binder Foot

No. 81200

The binder foot is used to apply ready-made bias tape or unfolded bias binding to an unfinished edge. It can also be useful for binding seam edges that might ravel.

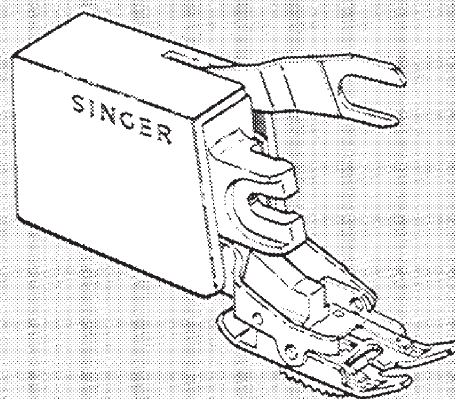


Binder Foot

### The Even Feed Foot

No. 506415

The even feed foot is a perfect aid for stitching difficult to match fabrics such as plaids and stripes and difficult-to-feed fabrics such as fabrics that have a pile, nap or a shiny surface. All these fabrics can be sewn without puckering and slipping.

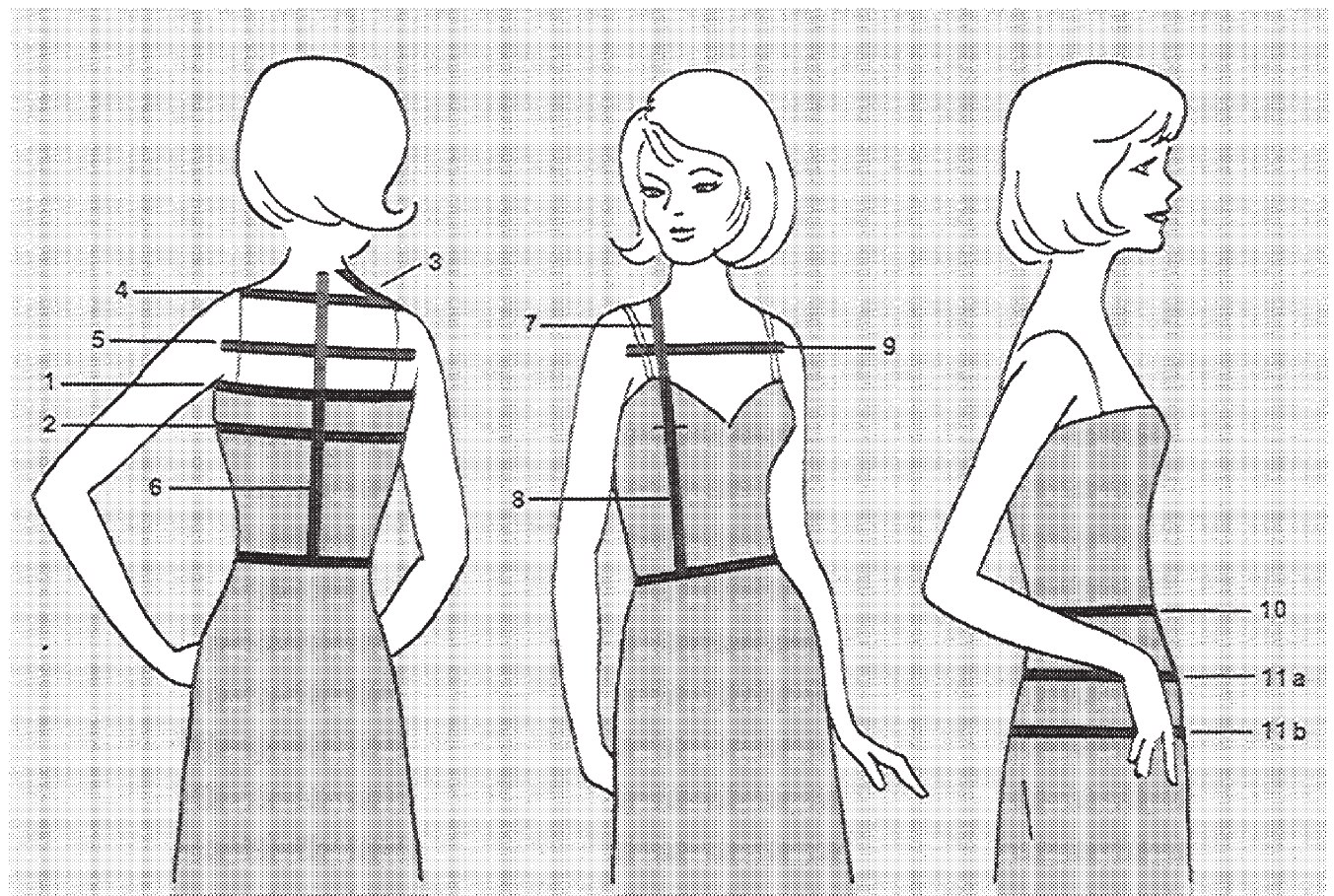


Even Feed Foot

## your personal measurements

This chart will enable you to keep a record of your measurements. For perfect accuracy, ask a friend to take your measurements.

1. Chest, entire (Take above bust and straight across back) .....
2. Bust (Take over fullest part of bustline and straight across back) .....
3. Shoulder length (right) .....
4. Shoulder to shoulder (back) (Take from armhole to armhole at shoulder seam) .....
5. Back width (Take 3"-7cm-to 4"-10cm-below shoulder seam at back armhole) .....
6. Backwaist length (Take from neckline to waistline, center) .....
7. Shoulder to bust, apex .....
8. Shoulder to waist, over apex .....
9. Front chest (Take 3" -7cm- down from shoulder at armhole, and from armhole to armhole) .....
10. Waistline (Around natural waistline) .....
- 11a. Hipline (Entire, 7" -17cm- from waistline) .....
- 11b. Hipline (Entire, 9" -22cm- from waistline) .....



# Index

|  |                |                                      |                        |
|--|----------------|--------------------------------------|------------------------|
| Accessories .....                        | 3, 4, 5        | Straight-Stitch .....                | 3                      |
| Appliqué .....                           | 44             | Operating the Machine .....          | 9                      |
| Basting .....                            | 27, 35         | Overedged Seams .....                | 53                     |
| Chainstitching .....                     | 35             | Pattern Repeat Button .....          | 21, 73                 |
| Pin .....                                | 27             | Performance Checklist .....          | 79                     |
| Speed Basting by Machine .....           | 27             | Personal Measurements .....          | 86                     |
| Blindstitch Hem Guide .....              | 4, 55          | Power and Light Switch .....         | 2, 9                   |
| Blindstitch Hems .....                   | 55             | Presser Feet .....                   | 3, 4, 7                |
| Bobbin .....                             | 3              | Button Foot .....                    | 4, 7                   |
| Newly Wound .....                        | 29             | Buttonhole Foot .....                | 4                      |
| Raising Bobbin Thread .....              | 19             | Changing Presser Feet .....          | 7                      |
| Removing Bobbin .....                    | 17             | Darning and Embroidery Foot .....    | 4, 8                   |
| Removing Thread .....                    | 17             | General Purpose .....                | 3                      |
| Replacing an Empty Bobbin .....          | 17             | Overedge Foot .....                  | 4                      |
| Replacing a Wound Bobbin .....           | 18             | Special Purpose Foot .....           | 3                      |
| Winding .....                            | 16             | Straight-Stitch Foot .....           | 3                      |
| Buttonholes .....                        | 70-72          | Zipper Foot .....                    | 4, 7                   |
| Balancing .....                          | 73             | Pressure Adjustments .....           | 46                     |
| Corded Buttonholes .....                 | 74             | Principal Parts .....                | 2                      |
| Series of Buttonholes .....              | 73             | Quilting .....                       | 34                     |
| Buttons .....                            | 69             | Reverse Stitching .....              | 25                     |
| Caring for Your Machine .....            | 82             | Reverse Stitch-Balance .....         | 24                     |
| Chaining Off .....                       | 36             | Satin Stitching .....                | 43                     |
| Chainstitching .....                     | 35             | Seam Guide .....                     | 3, 8                   |
| Circuit Breaker .....                    | 83             | Seams .....                          | 20, 29, 31, 36, 42, 46 |
| Darning .....                            | 32, 33, 78     | Chainstitch .....                    | 36                     |
| Decorative Stitches .....                | 64             | Curved .....                         | 31                     |
| Elastic Replacing .....                  | 59             | Overedged .....                      | 42                     |
| Electrical Connections .....             | 9              | Straight .....                       | 29                     |
| Embroidery .....                         | 33, 45         | Stretch .....                        | 46                     |
| Fabric-Handling Table .....              | 47             | Seam Finishes .....                  | 41                     |
| Fabric, Thread, and Needle Table .....   | 12, 13         | Selecting a Stitch .....             | 20                     |
| Fabric Weight Table .....                | 10, 11         | Sewing Knit and Stretch Fabric ..... | 46                     |
| Finishes for Hems and Facings .....      | 59             | Speed Controller .....               | 2, 9                   |
| Free-Arm Sewing .....                    | 75             | Spool Holders .....                  | 5, 14                  |
| Free-Motion Stitching .....              | 45             | Stitch Centering .....               | 48                     |
| Functional and Decorative Stitches ..... | 49-63          | Stitch Length .....                  | 22, 28                 |
| Guiding and Supporting Fabric .....      | 46             | Stitch Length Guidance Table .....   | 23                     |
| Individual Preferences .....             | 21             | Stitch Width .....                   | 22                     |
| Light Bulb .....                         | 83             | Straight Stitching .....             | 25                     |
| Mending .....                            | 58, 63, 78     | Curved Seams .....                   | 31                     |
| Mock Overedging .....                    | 54             | Reinforcing End of Seam .....        | 31                     |
| Needle .....                             | 3, 6           | Straight Seams .....                 | 30                     |
| Changing .....                           | 6              | Turning Square Corners .....         | 30                     |
| Threading .....                          | 15             | Stress Areas .....                   | 23                     |
| Thread Tension .....                     | 26, 40         | Tension Test .....                   | 26                     |
| Needle Plates .....                      | 2, 3, 5, 8, 37 | Threading the Machine .....          | 14, 15                 |
| Chainstitch Plate and Insert .....       | 5, 8, 37       | Topstitching .....                   | 66                     |
| Changing Plates .....                    | 8              | Twin-Needle Stitching .....          | 68                     |
| Feed Cover Plate .....                   | 5              | Twin-Needle Switch .....             | 24                     |
| General Purpose .....                    | 3              | Zig-Zag Stitching .....              | 40                     |



*Here, there, everywhere . . .* **SINGER**

*Enjoy Sewing!*

If you have any questions, please write to:

The Singer Company  
Consumer Affairs Department  
321 First Street  
Elizabeth, N.J. 07207

\*A Trademark of THE SINGER COMPANY

Printed in U.S.A.